

Exhibit 12 Part 12

Part 3 of Attachment L to the Allocation Recommendation Report (ARR2201-ARR2294)

United States' Motion to Enter Consent Decree,
United States v. Alden Leeds, Inc. et al., Civil Action No. 22-7326 (D.N.J.)

Allocation Facility Cmass Calculation

Coats & Clark, Inc.

735 Broad Street

Bloomfield NJ

07003

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic CMass
Copper	100.00%	140.82	100.00%	-	12.41%	-	100.00%	-	140.82	1.018817E-2	1.43
Lead	100.00%	255.02	100.00%	-	12.41%	-	100.00%	-	255.02	1.018817E-2	2.6
Mercury	100.00%	-	100.00%	-	12.41%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	41.19	100.00%	-	12.41%	-	100.00%	-	41.19	1.018817E-2	0.42
LPAHs	100.00%	58.58	100.00%	-	12.41%	-	100.00%	-	58.58	1.018817E-2	0.6
PCBs	100.00%	-	100.00%	-	12.41%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	12.41%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	12.41%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	12.41%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Coats & Clark, Inc.

735 Broad Street

Bloomfield NJ

07003

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	1.43	6.832E-7	4.714E-7
Lead	0.01	3,200,000.00	2.6	8.119E-7	8.119E-9
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	0.42	1.749E-6	8.743E-8
LPAHs	0.01	170,000.00	0.6	3.511E-6	3.511E-8
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Coats & Clark, Inc.

735 Broad Street

Bloomfield

NJ

07003

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	5.084E-4	1.43	1,066.31	5.084E-4	3.508E-4
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	8.837E-4	2.6	2,825.29	8.837E-4	8.837E-6
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	9.477E-6	0.42	1.85	9.477E-6	4.738E-7
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	1.944E-5	0.6	2.71	1.944E-5	1.944E-7
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Coats & Clark, Inc.

735 Broad Street

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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Union Outlet	Bypass	12.41%	100.00%	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	No information on sewer discharges or permits
	# days/week discharged	Thread Manufacturing/Dyeing process
	# weeks/yr discharged	1922 through "late" 1940s...some information say 1949
1,000,000	# gals/yr directly discharged	"Limited" Copper use at the facility
4.08	ft; 30yr average annual precipitation per Rutgers information	1988 and 2000 sediment sampling results indicate Copper, Lead and Mercury both up gradient
43,560	acres	and down gradient.
	ft2 per acre	Assuming discharge to the Third River and Passaic at 1MG per year. Assumption/Guesstimate
1922		discharge following wastewater treatment plant.
1949		
27	Yr Ops started	
	Yr Ops ceased	
	27 calc #yrs facility operated	
Copper (Cu)		
27	#yrs facility discharged	
-	calc mg/L COC discharged	Per Dr. Martin Bide's Expert Report, FDR Page 6
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
27	#yrs facility discharged	
-	calc mg/L COC discharged	Per Dr. Martin Bide's Expert Report, FDR Page 6
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
27	#yrs facility discharged	
-	calc mg/L COC discharged	Per Dr. Martin Bide's Expert Report, FDR Page 6
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
27	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
27	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
21	#yrs facility discharged within PCBs Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
10	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
0	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
27	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
4	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
5	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
0	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.
40 ACRES - TOTAL SITE AREA	FDR p 1		
30 ACRES - AFFECTED AREA	Rough estimate of site area with exposed fill determined from review of 1938 map (PAP-00075242). Estimating that 25% of the site had buildings	The Third River is a tributary to the Passaic and formed the southern and eastern boundaries of the site (FDR p 8)	
4,046.86 METERS ² /ACRE			
121,406 METERS ² (AFFECTED AREA)			
0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.		
12 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED		
1921 Year site operations began	Coats and Clark (as Clark Thread Company) bought the land 8/10/1921 (FDR p 1)		
1947 Year site processing and storage operations ceased	Coats and Clark (as Clark Thread Company) sold the land on 9/17/1947 to Scientific Glass Apparatus Company Inc (FDR p 1)		
26 NUMBER YEARS DISCHARGE			
316 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)			
1,875 KG/M ³ SOIL DENSITY	Surface soil is 1-5' of sand atop 2-3' silty sand (PAP-00077857). Density of silty sand and gravel ranges from 1378 to 2371 kg/m ³ , so the average is used. (http://structx.com/Soil_Properties_002.html)		
591,695 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)	Site is partially located on regional Historic Fill (FDR p 7)		
Copper (Cu)			
26 YEARS DISCHARGED	Copper sulfate was used as part of the dyeing processes (FDR p 1-2)		
238 MG/KG (MAX CONCENTRATION)	Max concentration at AOC 14 Sample TP-12S (1-2 ft bgs) (PAP-00075799, PAP-00076155)		
0.000001 kg per mg (Merck Index)			
141 KILOGRAMS DISCHARGED	No info regarding storage or use of lead on site (FDR p 6)		
Lead (Pb)			
26 YEARS DISCHARGED	Max concentration at AOC 15 Sample TP-14S (0-1 ft bgs) (PAP-00075800, PAP-000777868)		
431 MG/KG (MAX CONCENTRATION)			
0.000001 kg per mg (Merck Index)			
255 KILOGRAMS DISCHARGED	No info regarding storage or use of mercury on site (FDR p 5)		
Mercury (Hg)			
26 YEARS DISCHARGED	Mercury concentration set at 0 mg/kg because the mercury detections in soil were associated with thermometer manufacturing by the subsequent operator, Scientific Glass Apparatus Company, Inc. (FDR page 5).		
0.0 MG/KG (MAX CONCENTRATION)			
0.000001 kg per mg (Merck Index)			
0 KILOGRAMS DISCHARGED			

PAHs (listed in Benzo(a)pyrene Equivalent conversion table)

26 YEARS DISCHARGED
69.6 MG/KG (TOTAL PAH AVERAGE CONCENTRATION)
0.000001 kg per mg (Merck Index)

41 KILOGRAMS DISCHARGED

PAHs (others detected)

26 YEARS DISCHARGED
99 MG/KG (TOTAL PAH MAX CONCENTRATION)
0.000001 kg per mg (Merck Index)

59 KILOGRAMS DISCHARGED

PCBs

26 YEARS DISCHARGED

0 MG/KG (MAX OF REPORTED CONCENTRATIONS)

0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED

DDx

0 YEARS DISCHARGED within DDx Timeline
MG/KG (MAX CONCENTRATION)

0 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED

Dieldrin

0 YEARS DISCHARGED within Dieldrin Timeline
MG/KG (MAX CONCENTRATION)

3.785 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED

Dioxins/Furans

NONE FOUND IN AVAILABLE DOCUMENTATION
0 YEARS DISCHARGED

MG/KG (MAX CONCENTRATION)

0.000001 kg per mg (Merck Index)

0 calc kg COC discharged

SUMMARY CMASST ESTIMATES:

140.82 kg Copper
255.02 kg Lead
0.00 kg Mercury
41.19 kg PAHs (Benzo(a)pyrene Equivalent)
58.58 kg PAHs (Other)
0.00 kg PCBs
0.00 kg DDx
0.00 kg Dieldrin
0.00 kg Dioxins/Furans

495.61 MASS (KG) DISCHARGED FROM SURFACE SOIL

Total concentration of PAH compounds for Benzo(a)pyrene Equivalent
<https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample>.

PAH contamination is not attributable to site-specific operations (FDR p 5)

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	55.000	1.0	55.0000
Benzo(a)anthracene	68.000	0.1	6.8000
Benzo(b)fluoranthene	44.000	0.1	4.4000
Benzo(k)fluoranthene	43.000	0.01	0.4300
Chrysene	79.000	0.001	0.0790
Dibenz(a,h)anthracene	0.000	1.0	0.0000
Indeno(1,2,3-cd)pyrene	29.000	0.1	2.9000

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 69.6

All PAH values from AOC 16 Sample TP-21S (0-1 ft bgs). (PAP-00075806-7, PAP-00075822)

Anthracene	0
Acenaphthene	0
Acenaphthylene	0
Fluorene	0
Naphthalene	0
Phenanthrene	99
2-Methylnaphthalene	0
SUM	99

Allocation Facility Cmass Calculation

Coats & Clark, Inc.

900 Passaic Avenue /260 Ogden
StreetEast
Newark

NJ

07032

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic Cmass
Copper	100.00%	243.51	100.00%	-	0.23%	-	100.00%	33.1	276.63	1.018817E-2	2.82
Lead	100.00%	579.79	100.00%	-	0.23%	-	100.00%	-	579.79	1.018817E-2	5.91
Mercury	100.00%	-	100.00%	-	0.23%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	1.78	100.00%	-	0.23%	-	100.00%	-	1.78	1.018817E-2	0.02
LPAHs	100.00%	4.9	100.00%	-	0.23%	-	100.00%	-	4.9	1.018817E-2	0.05
PCBs	100.00%	-	100.00%	-	0.23%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	0.23%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.23%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.23%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Coats & Clark, Inc.

900 Passaic Avenue /260 Ogden
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	2.82	1.342E-6	9.260E-7
Lead	0.01	3,200,000.00	5.91	1.846E-6	1.846E-8
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	0.02	7.556E-8	3.778E-9
LPAHs	0.01	170,000.00	0.05	2.937E-7	2.937E-9
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Coats & Clark, Inc.

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StreetEast
Newark

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	9.988E-4	2.82	2,094.67	9.988E-4	6.892E-4
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	2.009E-3	5.91	6,423.31	2.009E-3	2.009E-5
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	4.095E-7	0.02	0.08	4.095E-7	2.048E-8
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	1.626E-6	0.05	0.23	1.626E-6	1.626E-8
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	No information on sewer discharges or permits
	# days/week discharged	Thread Manufacturing/Dyeing process
	# weeks/yr discharged	1922 through "late" 1940s....some information say 1949
1,000,000	# gals/yr directly discharged	"Limited" Copper use at the facility
4.08	ft; 30yr average annual precipitation per Rutgers information	
43,560	acres	Assuming discharge to the Passaic at 1MG per year. Assumption/Guesstimate
	ft2 per acre	Direct discharge w/o wastewater treatment
	acres	
50%	Percent Precip to River	
1865	Yr Ops started	
1926	Yr Ops ceased	
61	calc #yrs facility operated	
Copper (Cu)		
35	#yrs facility discharged	
0.250	calc mg/L COC discharged	Per Dr. Martin Bide's Expert Report, FDR Page 7-8
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
33.12	calc kg COC discharged	
Lead (Pb)		
61	#yrs facility discharged	
-	calc mg/L COC discharged	Per Dr. Martin Bide's Expert Report, FDR Page 7-8
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
61	#yrs facility discharged	
-	calc mg/L COC discharged	Per Dr. Martin Bide's Expert Report, FDR Page 8
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
61	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
61	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
-2	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
-13	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
-23	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
61	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
-19	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
-18	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
-23	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
33.12	kg Copper	
-	kg Lead	
-	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES																																
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.																																
17.1 ACRES - TOTAL SITE AREA (acres)		Acreage in 1920, both Newark mill and East Newark mill (FDR p 1)																																	
4.28 ACRES - AFFECTED AREA		Looks to be around 75% buildings in 1930-current aerial photos here https://njdep.maps.arcgis.com/apps/webappviewer/index.html and Google Earth Pro																																	
4,046.86 METERS ² /ACRE																																			
17,300 METERS ² (AFFECTED AREA)																																			
0.0001 METERS/YEAR (ERODED SOIL THICKNESS)		For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.																																	
2 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED TO DITCHES																																		
1865 Year Coats and Clark operations began 1989 Year Coats and Clark sold the Newark mill site (FDR p 1)	FDR p 1 Coats & Clark Newark mill operations ceased in 1947, although a research and development operation remained until 1963. (FDR p 1)	East Newark mill operations ended in 1931 and the site was sold in 1935 (FDR p 2-3)																																	
124 NUMBER YEARS DISCHARGE																																			
215 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)																																			
1,931 KG/M ³ SOIL DENSITY		Below foundation slab - silty sand or well-graded sand with varying amounts of gravel (PAP-00080266). Density ranges from 1378 to 2483 kg/m ³ , average is used (http://structx.com/Soil_Properties_002.html)																																	
414,139 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)																																			
Copper (Cu)	124 YEARS DISCHARGED 588 MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index)	This site is partially located on regional historic fill (FDR p 9) Copper sulfate used on site (FDR p 4)																																	
	244 KILOGRAMS DISCHARGED	Data from sample B-124-2 (1.5-2 ft bgs) collected in 2013 (PAP-00080359)																																	
Lead (Pb)	124 YEARS DISCHARGED 1400 MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index)	No info on use of lead on site (FDR p 8)																																	
	580 KILOGRAMS DISCHARGED	Data from sample B-30-4.5(3.5-4 ft bgs) collected in 2012 (PAP-00080346)																																	
Mercury (Hg)	124 YEARS DISCHARGED 0 MG/KG (MAX CONCENTRATION)	No info on use of mercury on site (FDR p 8)																																	
	0.000001 kg per mg (Merck Index)	Mercury concentration set at 0 mg/kg because the mercury detections in soil were not associated with the pre-1935 mill complex operations (FDR pages 8-9) and the portion of the site that has mercury data (East Newark Mill) was sold in 1935 (FDR page 1).																																	
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	124 YEARS DISCHARGED 4.3 MG/KG (TOTAL PAH AVERAGE CONCENTRATION) 0.000001 kg per mg (Merck Index)	Total concentration of PAH compounds for Benzo(a)pyrene Equivalent https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample .	No specific info on use of SVOCs on site but thread making operations often used coal-tar based aniline dyes (FDR p 7)																																
PAHs (others detected)	2 KILOGRAMS DISCHARGED	Data below the Benzo(a)pyrene Equivalent Table	<table border="1"> <thead> <tr> <th>Contaminant</th><th>Concentration (mg/kg)</th><th>Toxic Equivalency Factor</th><th>Benzo(a)pyrene Equivalents</th></tr> </thead> <tbody> <tr> <td>Benzo(a)pyrene</td><td>2.960</td><td>1.0</td><td>2.9600</td></tr> <tr> <td>Benzo(a)anthracene</td><td>3.760</td><td>0.1</td><td>0.3760</td></tr> <tr> <td>Benzo(b)fluoranthene</td><td>4.350</td><td>0.1</td><td>0.4350</td></tr> <tr> <td>Benzo(k)fluoranthene</td><td>1.560</td><td>0.01</td><td>0.0156</td></tr> <tr> <td>Chrysene</td><td>4.120</td><td>0.001</td><td>0.0041</td></tr> <tr> <td>Dibenz(a,h)anthracene</td><td>0.404</td><td>1.0</td><td>0.4040</td></tr> <tr> <td>Indeno(1,2,3-cd)pyrene</td><td>1.100</td><td>0.1</td><td>0.1100</td></tr> </tbody> </table>	Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents	Benzo(a)pyrene	2.960	1.0	2.9600	Benzo(a)anthracene	3.760	0.1	0.3760	Benzo(b)fluoranthene	4.350	0.1	0.4350	Benzo(k)fluoranthene	1.560	0.01	0.0156	Chrysene	4.120	0.001	0.0041	Dibenz(a,h)anthracene	0.404	1.0	0.4040	Indeno(1,2,3-cd)pyrene	1.100	0.1	0.1100
Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents																																
Benzo(a)pyrene	2.960	1.0	2.9600																																
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Indeno(1,2,3-cd)pyrene	1.100	0.1	0.1100																																
	124 YEARS DISCHARGED 11.84 MG/KG (TOTAL PAH MAX CONCENTRATION) 0.000001 kg per mg (Merck Index)	DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg																																	
	5 KILOGRAMS DISCHARGED	Total Benzo(a)pyrene Equivalents =	4.3																																

PCBs

124 YEARS DISCHARGED

0 MG/KG MAX OF REPORTED CONCENTRATIONS

0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED

DDx

124 YEARS DISCHARGED within DDx Timeline

MG/KG (MAX CONCENTRATION)

3.785 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED

Dieldrin

124 YEARS DISCHARGED within Dieldrin Timeline

MG/KG (MAX CONCENTRATION)

3.785 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)

0 KILOGRAMS DISCHARGED

Dioxins/Furans

NONE FOUND IN AVAILABLE DOCUMENTATION

124 YEARS DISCHARGED

MG/KG (MAX CONCENTRATION)

0.000001 kg per mg (Merck Index)

0 kg COC discharged

SUMMARY CMASS ESTIMATES:

243.51 kg Copper

579.79 kg Lead

0.00 kg Mercury

1.78 kg PAHs (Benzo(a)pyrene Equivalent)

4.90 kg PAHs (Other)

0.00 kg PCBs

0.00 kg DDx

0.00 kg Dieldrin

0.00 kg Dioxins/Furans

829.99 MASS (KG) DISCHARGED FROM SURFACE SOIL

Facility Bypass Information

Coats & Clark, Inc.

900 Passaic Avenue /260 Ogden Street

East Newark

NJ

07032

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Central Ave	CSO	0.37%	61.94%	

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Coats & Clark, Inc.

900 Passaic Avenue /260 Ogden
StreetEast
Newark

NJ

07032

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
9.512E-7	0.0%	Historically Compliant or No Evidence	Facility was identified by the PVSC as polluting the Passaic River in 1926, but this pollution was subsequently eliminated when the wet operations were moved to Bloomfield (which had a water treatment plant) in 1926 (PAS-00027177-78; PAP-00128118). No information on violations was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	7.610E-7

735 Broad Street

Bloomfield

NJ

07003

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
6.021E-7	0.0%	Historically Compliant or No Evidence	EPA performed a Potential Hazardous Waste Site Preliminary Assessment in 1982 in response to a complaint that mercury was disposed on-site in a shallow pit and surface water. Facility was indicated to be abating pollution with their water treatment plant when processes were moved there in 1926 (PAP-00128118; PAP-00129824). Given date of inspection, difficult to ascertain whether actions resulting in contamination were during Coats & Clark operations on site.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	4.816E-7

AP_ABS

1.243E-6

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Coats & Clark, Inc.

900 Passaic Avenue /260 Ogden
StreetEast
Newark

NJ

07032

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
7.093E-4	0.0%	Historically Compliant or No Evidence	Facility was identified by the PVSC as polluting the Passaic River in 1926, but this pollution was subsequently eliminated when the wet operations were moved to Bloomfield (which had a water treatment plant) in 1926 (PAS-00027177-78; PAP-00128118). No information on violations was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	5.674E-4

735 Broad Street

Bloomfield

NJ

07003

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
3.603E-4	0.0%	Historically Compliant or No Evidence	EPA performed a Potential Hazardous Waste Site Preliminary Assessment in 1982 in response to a complaint that mercury was disposed on-site in a shallow pit and surface water. Facility was indicated to be abating pollution with their water treatment plant when processes were moved there in 1926 (PAP-00128118; PAP-00129824). Given date of inspection, difficult to ascertain whether actions resulting in contamination were during Coats & Clark operations on site.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	2.883E-4

AP_ABS

8.557E-4

Allocation Facility Cmass Calculation

Congoleum Corp.

195 Belgrave Drive

Kearny

NJ

07032

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic CMass
Copper	100.00%	982.92	100.00%	-	0.04%	-	100.00%	-	982.92	1.018817E-2	10.01
Lead	100.00%	1,369.24	100.00%	-	0.04%	-	100.00%	-	1,369.24	1.018817E-2	13.95
Mercury	100.00%	13.71	100.00%	-	0.04%	-	100.00%	-	13.71	1.018817E-2	0.14
HPAHs	100.00%	13.87	100.00%	1,013.78	0.04%	1,333.92	100.00%	1,798.6	2,826.87	1.018817E-2	28.8
LPAHs	100.00%	29.74	100.00%	675.85	0.04%	889.28	100.00%	1,199.1	1,905.07	1.018817E-2	19.41
PCBs	100.00%	382.96	100.00%	-	0.04%	-	100.00%	-	382.96	1.018817E-2	3.9
DDx	100.00%	1.56	100.00%	-	0.04%	-	100.00%	-	1.56	1.018817E-2	0.02
Dieldrin	100.00%	-	100.00%	-	0.04%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.04%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Congoleum Corp.

195 Belgrave Drive

Kearny

NJ

07032

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	10.01	4.769E-6	3.290E-6
Lead	0.01	3,200,000.00	13.95	4.359E-6	4.359E-8
Mercury	0.95	42,000.00	0.14	3.326E-6	3.159E-6
HPAHs	0.05	240,000.00	28.8	1.200E-4	6.000E-6
LPAHs	0.01	170,000.00	19.41	1.142E-4	1.142E-6
PCBs	12.87	26,000.00	3.9	1.501E-4	1.931E-3
DDx	1.37	27,000.00	0.02	5.886E-7	8.065E-7
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Congoleum Corp.

195 Belgrave Drive

Kearny

NJ

07032

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	3.549E-3	10.01	7,442.8	3.549E-3	2.449E-3
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	4.745E-3	13.95	15,169.37	4.745E-3	4.745E-5
Mercury	0.95	42,000.00	4,322.53	41,955.96	3.172E-3	0.14	133.07	3.172E-3	3.013E-3
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	6.504E-4	28.8	127.29	6.504E-4	3.252E-5
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	6.323E-4	19.41	88.08	6.323E-4	6.323E-6
PCBs	12.87	26,000.00	20,066.54	25,795.56	1.908E-2	3.9	492.3	1.908E-2	2.456E-1
DDx	1.37	27,000.00	2,516.93	26,974.36	6.198E-4	0.02	16.72	6.198E-4	8.491E-4
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Congoleum Corp.

195 Belgrave Drive

Kearny

NJ

07032

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Nairne Ave	CSO	0.22%	19.85%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day	1972 Waste Effluent Survey used for flow rates
	# hours/per day discharged	39,158,000 gallons to Sanitary Sewer
	#days/week discharged	PAP-00056086.8
	#weeks/yr discharged	
39,158,000.00	calc gal/yr discharge	
1886	Yr Ops started	
1974	Yr Ops ceased	
88	calc #yrs facility operated	
Copper (Cu)		
88	#yrs facility discharged	
-	calc mg/L COC discharged	PAP-0056085-00056088
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
88	#yrs facility discharged	
-	calc mg/L COC discharged	PAP-0056085-00056088
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
88	#yrs facility discharged	
-	calc mg/L COC discharged	PAP-0056085-00056088
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHS		
88	#yrs facility discharged	
-	calc mg/L O&G	PAP-0056085-00056088
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
0.18	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
2,347.69	calc kg COC discharged	
LPAHs		
88	#yrs facility discharged	
-	calc mg/L O&G	PAP-0056085-00056088
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
0	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,565.13	calc kg COC discharged	
PCBs		
46	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
25	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
88	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
29	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
30	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
25	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
2,347.69	kg HPAHs	
1,565.13	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	1972 Waste Effluent Survey used for flow rates
	# days/week discharged	30,000,000 gallons to Storm Sewer to Passaic River
	# weeks/yr discharged	PAP-00056086.8
30,000,000	# gals/yr directly discharged	
4.08	ft; 30yr average annual precipitation per Rutgers information	
	acres	
43,560	ft2 per acre	
1886	Yr Ops started	
1974	Yr Ops ceased	
88	calc #yrs facility operated	
Copper (Cu)		
88	#yrs facility discharged	PAP-0056085-00056088
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
88	#yrs facility discharged	PAP-0056085-00056088
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
88	#yrs facility discharged	PAP-0056085-00056088
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
88	#yrs facility discharged	
-	calc mg/L O&G	PAP-0056085-00056088
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
0.18	calc mg/l HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,798.63	calc kg COC discharged	
LPAHs		
88	#yrs facility discharged	
-	calc mg/L O&G	PAP-0056085-00056088
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
0.12	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,199.09	calc kg COC discharged	
PCBs		
46	#yrs facility discharged within PCBs Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
25	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
88	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
29	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
30	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
25	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
1,798.63	kg HPAHs	
1,199.09	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

DISCHARGE CALCULATIONS	DIRECT DISCHARGE INFORMATION	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
4.08 FEET/YEAR AVERAGE PRECIPITATION		Long term average annual precipitation includes floods and hurricane events occurring over time. Even with the fill events, the site is still subject to periodic flooding from the Passaic River (PAP-00054694).	Data from Rutgers University.
66 ACRES - TOTAL SITE AREA (acres)	FDR, page 1; confirmed on Google Earth		
19 ACRES - AFFECTED AREA		Exclude 46.5 acres of buildings and pavement from total 66 acre area for erosion potential (1995-2020 Google Earth aerial photos)	The Kearny Manufacturing Facilities were approximately 58.5 acres and the Kearny Administrative Facilities were approximately 7.5 acres (PAP-00724224).
4,046.86 METERS ² /ACRE	CONVERSION TO METERS		
76,890 METERS ² (AFFECTED AREA)			
0.0001 METERS/YEAR (ERODED SOIL THICKNESS)		For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
8 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED TO PASSAIC		
1886 Year site operations began	Congoleum entities: approximately 1886 – to 1979 (PAP-00220483; PAP-00402989- 90).		
1976 Year site was sold to Franklin Burlington Plastics	FDR page 5.		
90 NUMBER YEARS DISCHARGE			
692 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)			
2,251 KG/M ³ SOIL DENSITY	Fill material consisting of silt and clay with miscellaneous debris (PAP-00056120). Bulk density range 2002 KG/M ³ to 2499 KG/M ³ , so use average. (http://structx.com/Soil_Properties_002.html)		
1,557,721 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)	Some of the site perimeter is located on historic fill material (FDR PDF PAGE 22-3)		
Copper (Cu)			
90 YEARS DISCHARGED			
631 MG/KG (MAX CONCENTRATION)	PAP-00056226		
0.000001 kg per mg (Merck Index)			
983 KILOGRAMS DISCHARGED			
Lead (Pb)			
90 YEARS DISCHARGED			
879 MG/KG MAX CONCENTRATION	Max concentration of lead from Table 8 (PAP-00056224)		
0.000001 kg per mg (Merck Index)			
1,369 KILOGRAMS DISCHARGED			

DISCHARGE CALCULATIONS	DIRECT DISCHARGE INFORMATION	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
Mercury (Hg)	90 YEARS DISCHARGED 8.8 MG/KG (MAX CONCENTRATION)	Small amounts of mercury were used as an anti-bacteria agent in floor adhesives (PAP-00233591). Max concentration of mercury from Table 8 (PAP-00056224)	
	0.000001 kg per mg (Merck Index) 14 KILOGRAMS DISCHARGED		
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	90 YEARS DISCHARGED 8.9 MG/KG (TOTAL PAH MAX CONCENTRATION)	Sum of Benzo(a)pyrene Equivalent conversion concentrations	
	0.000001 kg per mg (Merck Index) 14 KILOGRAMS DISCHARGED	Data below the Benzo(a)pyrene Equivalent Table	
PAHs (others detected)	90 YEARS DISCHARGED 19 MG/KG (TOTAL PAH MAX CONCENTRATION)	LMW PAH concentration at sample HF-4(DUP) from 0.5-1.0 ft bgs (PAP-00056223)	
	0.000001 kg per mg (Merck Index) 30 KILOGRAMS DISCHARGED		
PCBs	46 YEARS DISCHARGED 481.0 MG/KG (MAX OF REPORTED CONCENTRATIONS)	Reduced discharge period to 1930-1976 (46 years) PAP-00223757	
	0.000001 kg per mg (Merck Index) 383 KILOGRAMS DISCHARGED		
DDx	90 YEARS DISCHARGED within DDx Timeline 0.000021 MG/KG (MAX CONCENTRATION)	4,4-DDD from Table 8 (PAP-00056223)	
	0.000001 kg per mg (Merck Index) 2 KILOGRAMS DISCHARGED		
Dieldrin	90 YEARS DISCHARGED within Dieldrin Timeline	NONE REPORTED	
	MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index) 0 KILOGRAMS DISCHARGED		
Dioxins/Furans	90 YEARS DISCHARGED MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index)	NONE REPORTED 0 KILOGRAMS DISCHARGED	
SUMMARY CMASS ESTIMATES: <ul style="list-style-type: none"> 982.92 kg Copper 1,369.24 kg Lead 13.71 kg Mercury 13.87 kg PAHs (Benzo(a)pyrene Equivalent) 29.74 kg PAHs (Other) 382.96 kg PCBs 1.56 kg DDx 0.00 kg Dieldrin 0.00 kg Dioxins/Furans 			
2793.99 TOTAL MASS (KG) DISCHARGED FROM SURFACE SOIL			

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Congoleum Corp.

195 Belgrave Drive

Kearny

NJ

07032

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
1.946E-3	5.0%	Occasional Noncompliance	Poor housekeeping identified in the 1950s during an inspection (fire hazards noted, oil dumped in the weeds) (PAP-00056081). In April 1990 three areas of abandoned drums in poor condition were discovered along the Passaic River, and solidified sludge from a vinyl tile manufacturing process was observed on the property (PAP-00337307; PAP-00054201-02). Congoleum employees had heard stories over the years had stated "scrap vinyl may have been buried on some portions of the Kearny Facility" (PAS-00104956; PAS-00104961). On or about August 19, 1943, during World War II, there was an explosion at the Kearny Facility. (PAP-00233575). According to an October 18, 1943, memo to the Kearny Fire Department the explosion occurred at Building No. 12 in the Number 6 stove, as a result of an explosion of vapors of Sovosol No. 5 used as a solvent for the paint used in the treating of camouflage nets (PAP-00232310).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	1.654E-3

AP_ABS

1.654E-3

ARR2225

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Congoleum Corp.

195 Belgrave Drive

Kearny

NJ

07032

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
2.520E-1	5.0%	Occasional Noncompliance	Poor housekeeping identified in the 1950s during an inspection (fire hazards noted, oil dumped in the weeds) (PAP-00056081). In April 1990 three areas of abandoned drums in poor condition were discovered along the Passaic River, and solidified sludge from a vinyl tile manufacturing process was observed on the property (PAP-00337307; PAP-00054201-02). Congoleum employees had heard stories over the years had stated "scrap vinyl may have been buried on some portions of the Kearny Facility" (PAS-00104956; PAS-00104961). On or about August 19, 1943, during World War II, there was an explosion at the Kearny Facility. (PAP-00233575). According to an October 18, 1943, memo to the Kearny Fire Department the explosion occurred at Building No. 12 in the Number 6 stove, as a result of an explosion of vapors of Sovosol No. 5 used as a solvent for the paint used in the treating of camouflage nets (PAP-00232310).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	2.142E-1

AP_ABS

2.142E-1

Allocator's Determinations Regarding Legal Defenses Raised by Allocation Parties

CONGOLEUM

Congoleum argues that the current Congoleum never owned and/or operated the Kearny Manufacturing Facilities property that is the subject of this OU2 Allocation proceeding and Current Congoleum is not the successor to any entity or business which did own and/or operate the Kearny Manufacturing Facilities. Accordingly, pursuant to Step 2(d)(9) of the Allocation Protocol, Current Congoleum submits that these facts establish a complete defense to liability for alleged discharges from the Kearny Facility.

ALLOCATOR'S DETERMINATION – Congoleum states a credible argument regarding the timing of its purchase of assets from its predecessor and the sale of the Kearny Manufacturing facility. However, uncertainties regarding the evolution of the corporation and its predecessor and its use of Kearny facility property raise doubts about its ability to prevail in an action to overturn EPA's determination of Congoleum as a PRP based on the supplied information. Though the Allocator presumes a substantial chance of success should this matter go to litigation, we leave this matter as a topic for settlement discussions between Congoleum and EPA.

Allocation Facility Cmass Calculation

Conopco, Inc.					540 New York Avenue				Lyndhurst		NJ	07071
Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic Cmass	
Copper	100.00%	40.44	100.00%	-	2.32%	79,883.53	100.00%	-	1,893.74	1.018817E-2	19.29	
Lead	100.00%	218.21	100.00%	-	2.32%	1,656.12	100.00%	-	256.63	1.018817E-2	2.61	
Mercury	100.00%	4.	100.00%	-	2.32%	9.74	100.00%	-	4.23	1.018817E-2	0.04	
HPAHs	100.00%	150.66	100.00%	-	2.32%	10,209.51	100.00%	983.1	1,370.66	1.018817E-2	13.96	
LPAHs	100.00%	849.6	100.00%	-	2.32%	6,806.34	100.00%	655.4	1,662.93	1.018817E-2	16.94	
PCBs	100.00%	0.12	100.00%	-	2.32%	-	100.00%	-	0.12	1.018817E-2	0	
DDx	100.00%	88.48	100.00%	-	2.32%	-	100.00%	-	88.48	1.018817E-2	0.9	
Dieldrin	100.00%	0.02	100.00%	-	2.32%	-	100.00%	-	0.02	1.018817E-2	0	
Dioxins_Furans	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0	

Allocation Facility COC Base Scores - Protocol Calculation

Conopco, Inc.

540 New York Avenue

Lyndhurst

NJ

07071

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	19.29	9.187E-6	6.339E-6
Lead	0.01	3,200,000.00	2.61	8.171E-7	8.171E-9
Mercury	0.95	42,000.00	0.04	1.025E-6	9.739E-7
HPAHs	0.05	240,000.00	13.96	5.819E-5	2.909E-6
LPAHs	0.01	170,000.00	16.94	9.966E-5	9.966E-7
PCBs	12.87	26,000.00	0	4.702E-8	6.052E-7
DDx	1.37	27,000.00	0.9	3.339E-5	4.574E-5
Dieldrin	0.13	390.00	0	5.225E-7	6.792E-8
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Conopco, Inc.

540 New York Avenue

Lyndhurst

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	6.838E-3	19.29	14,339.62	6.838E-3	4.718E-3
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	8.893E-4	2.61	2,843.14	8.893E-4	8.893E-6
Mercury	0.95	42,000.00	4,322.53	41,955.96	9.777E-4	0.04	41.02	9.777E-4	9.288E-4
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	3.154E-4	13.96	61.72	3.154E-4	1.577E-5
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	5.519E-4	16.94	76.89	5.519E-4	5.519E-6
PCBs	12.87	26,000.00	20,066.54	25,795.56	5.980E-6	0	0.15	5.980E-6	7.696E-5
DDx	1.37	27,000.00	2,516.93	26,974.36	3.515E-2	0.9	948.25	3.515E-2	4.816E-2
Dieldrin	0.13	390.00	1.27	389.99	1.580E-2	0	6.16	1.580E-2	2.054E-3
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Conopco, Inc.

540 New York Avenue

Lyndhurst

NJ

07071

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Yantacaw	Bypass	2.32%	100.00%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	No data Conopco, using Goodrich and Purdue as a similar operation
	# hours/ per day discharged	
	#days/week discharged	
	#weeks/yr discharged	
114,391,833	calc gal/yr discharge (FDR)	
365	#day per yr operated (FDR) {	
1941	Yr Ops started (FDR)	
1986	Yr Ops ceased (FDR)	
45	calc #yrs facility operated	
Copper (Cu)		
45	#yrs facility discharged	
4.10	calc mg/L COC discharged	Based on Goodrich
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
79,884	calc kg COC discharged	
Lead (Pb)		
45	#yrs facility discharged	Based on Purdue
0.085	calc mg/L COC discharged; (FDR) PAP00128020	
3.785	L per gallon (Merck index)	
0.000001	kg per mg (Merck Index)	
1,656.12	calc kg COC discharged	
Mercury (Hg)		
45	#yrs facility discharged	
0.0005	calc mg/L COC discharged; (FDR)	Based on Goodrich
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
9.74	calc kg COC discharged	
HPAHs		
45	#yrs facility discharged	
8.7	calc mg/L O&G (FDR)	Based on Goodrich
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
0.52	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
10,210	calc kg COC discharged	
LPAHs		
45	#yrs facility discharged	
8.7	calc mg/L O&G (FDR)	Based on Goodrich
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
0.35	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
6,806	calc kg COC discharged	
PCBs		
37	#yrs facility discharged within PCBs Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
32	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Die�din		
37	#yrs facility discharged within Die�din Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
45	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
41	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
79,884	kg Copper	
1,656	kg Lead	
10	kg Mercury	
10,210	kg HPAHs	
6,806	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Die�din	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	No information using Goodrich and Purdue as similar operations
	# days/week discharged	
	# weeks/yr discharged	
481,009,150	# gals/yr directly discharged	
4.08	ft; 30yr average annual precipitation per Rutgers information	
	acres	
43,560	ft ² per acre	
365	#day operated per yr (PAP-00206119, PAP-00433684)	
1941	Yr Ops started	
1986	Yr Ops ceased	
45	calc #yrs facility operated	
Copper (Cu)		
45	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
45	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
45	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
45	#yrs facility discharged	
0.2	calc mg/L O&G discharged (PAP-00206137)	special calcs to use PAHs to determine PAH mass discharged via outside catch basins
10%	% PAHs assumed in O&G	
60%	% PAHs assumed in HPAHs	
0.01	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
983.13	calc kg COC discharged	
LPAHs		
45	#yrs facility discharged	
0.2	calc mg/L O&G discharged (PAP-00206137)	special calcs to use PAHs to determine PAH mass discharged via outside catch basins
10%	% PAHs assumed in O&G	
40%	% PAHs assumed in LPAHs	
0.01	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
655.42	calc kg COC discharged	
PCBs		
37	#yrs facility discharged within PCBs Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
32	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
37	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
45	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
41	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
983	kg HPAHs	
655	kg LPAHs	
-	kg PCBs	

-	kg DDX	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs

Direct Discharge Information
4.08 FEET/YEAR AVERAGE PRECIPITATION

ASSUMPTIONS, REFERENCES
Long term average annual precipitation includes floods and hurricane events occurring over time.

COMMENTS/NOTES
Data from Rutgers University.

17 ACRES - TOTAL SITE AREA (acres)

6 ACRES - AFFECTED AREA

90 percent of site was covered with impervious material and 40 percent was buildings (FDR Page 24, PAS-00113240). Estimate 20 years (1941-1961) 40 percent buildings without asphalt, 25 years 90 percent impervious with buildings = 5.6 acres

4,046.86 METERS²/ACRE

22,662 METERS² (AFFECTED AREA)

0.0001 METERS/YEAR (ERODED SOIL THICKNESS)
For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.

2 METERS³/YEAR (ERODED SOIL VOLUME)

VOLUME/YEAR DISCHARGED TO PASSAIC RIVER

1941 Year site operations began
1986 Year site processing and storage operations ceased

FDR page 2 PAS-00113112, 2741, 3149; PAP-00048761
FDR page 2 PAS-00113112, 2741, 3149; PAP-00048761

45 NUMBER YEARS DISCHARGE

Conopco liability 45 years, 1941 to 1986 (FDR, page 2)

102 METERS³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)

Fill reported as fine to medium sand with trace gravel (PAS-00113242). Bulk density range for silty sand and gravel 1442 KG/M³ to 2483 KG/M³, so use average. (http://structx.com/Soil_Properties_002.html)

200,188 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)

Facility is partially located on historic fill (FDR, page 15)

Copper (Cu)

45 YEARS DISCHARGED
202 MG/KG (MAX CONCENTRATION)

Copper concentration in on-site surface soil sample TSA-5 (PAS-00113344).

0.000001 kg per mg (Merck Index)
40 KILOGRAMS DISCHARGED

Lead (Pb)

45 YEARS DISCHARGED
1090 MG/KG (MAX CONCENTRATION)

Lead concentration in on-site soil sample OPA-29 (PAS-00113345, depth unknown).

0.000001 kg per mg (Merck Index)
218 KILOGRAMS DISCHARGED

Mercury (Hg)

45 YEARS DISCHARGED
20.0 MG/KG (MAX CONCENTRATION)

Mercury concentration in on-site soil sample OPA-37 (PAS-00113284, depth unknown).

0.000001 kg per mg (Merck Index)
4 KILOGRAMS DISCHARGED

PAHs (listed in Benzo(a)pyrene Equivalent conversion table)

45 YEARS DISCHARGED
752.6 MG/KG (TOTAL PAH AVERAGE CONCENTRATION)

0.000001 kg per mg (Merck Index)
151 KILOGRAMS DISCHARGED

PAHs (others detected)

45 YEARS DISCHARGED
4244 MG/KG (TOTAL PAH MAX CONCENTRATION)
0.000001 kg per mg (Merck Index)

850 KILOGRAMS DISCHARGED

PCBs

45 YEARS DISCHARGED

0.62 MG/KG (MAX CONCENTRATION)

0.000001 kg per mg (Merck Index)
0 KILOGRAMS DISCHARGED

DDx

45 YEARS DISCHARGED within DDx Timeline
442 MG/KG (MAX CONCENTRATION SUM)

3.785 L per gallon (Merck Index)
0.000001 kg per mg (Merck Index)

Dieldrin

45 NONE FOUND IN AVAILABLE DOCUMENTATION
0.1 MG/KG (MAX CONCENTRATION)

Maximum surface soil concentration found in surface soil (0-3 ft bgs) (PAP-00328282).

DDT use began in 1940s - assume present between 1941 and 1986
DDD and DDT concentrations from INI4-2 (1 foot bgs) (PAS-00113127)

Dioxins/Furans

NONE FOUND IN AVAILABLE DOCUMENTATION

0 YEARS DISCHARGED
0 MG/KG (MAX CONCENTRATION)
0.000001 kg per mg (Merck Index)

0 calc kg COC discharged

SUMMARY CMASS ESTIMATES:

- 40.44 kg Copper
- 218.21 kg Lead
- 4.00 kg Mercury
- 150.66 kg PAHs (Benzo(a)pyrene Equivalent)
- 849.60 kg PAHs (Other)
- 0.12 kg PCBs
- 88.48 kg DDx
- 0.02 kg Dieldrin
- 0.00 kg Dioxins/Furans

1351.53 MASS (KG) DISCHARGED FROM SURFACE SOIL

Total concentration of PAH compounds for Benzo(a)pyrene Equivalent
https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample.

Sum of Benzo(a)pyrene Equivalent conversion concentrations using Deed
Restriction maximum concentrations found in surface soil sample LB-33 (0-0.5 ft bgs) (PAS-00113306).

Other PAHs = Acenaphthene = 130, Acenaphthylene = 65, Anthracene = 420, Fluorene = 250, Fluoranthene = 1200, Naphthalene = 39, Phenanthrene = 1200, Pyrene = 940 (mg/kg) (PAS-00113306)

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Used PAH concentrations documented in sample LB-33 (0-0.5 ft bgs) (PAS-00113306).			
Benzo(a)pyrene	480.000	1.0	480.0000
Benzo(a)anthracene	840.000	0.1	84.0000
Benzo(b)fluoranthene	770.000	0.1	77.0000
Benzo(k)fluoranthene	0.000	0.01	0.0000
Chrysene	580.000	0.001	0.5800
Dibenz(a,h)anthracene	83.000	1.0	83.0000
Indeno(1,2,3-cd)pyrene	280.000	0.1	28.0000

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = **752.6**

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Conopco, Inc.

540 New York Avenue

Lyndhurst

NJ

07071

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
5.764E-5	10.0%	Periodic Noncompliance	The PVSC documented discharges of unknown off-color materials in the storm sewer that were traced to be coming from the facility in 1947, 1948, 1956, 1970-1971, 1974, 1976, 1977, and 1978. Several of these were noted as violations (see Section 6 of Data Report). An October 23, 1990, Progress Report on Cleanup of South Drainage Trench referred to notices of violations Penco of Lyndhurst received concerning unpermitted discharges to the storm sewer and from the drainage ditch (PAS-00113370, 372-73). According to the PVSC Weekly Summary of Inspections by Inspector, on May 3, 1956, inspection of the Lyndhurst storm sewer showed a jet black discharge into the Passaic River that had killed a number of small fish. In May [1977], suppression of a fire on para-nitrophenol (PNP) pallets washed PNP into the storm sewer (PAS-00112802). Many of the chemicals were stored in above- and below-ground tanks and in 55-gallon drums in various locations. Prior to construction Buildings 38 and 39, the area occupied by Building 39 was used for storage of solvents in drums. Infrequently, materials were spilled or drums ruptured. (see FDR p. 6)	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	5.188E-5

AP_ABS

5.188E-5

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Conopco, Inc.

540 New York Avenue

Lyndhurst

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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
5.597E-2	10.0%	Periodic Noncompliance	The PVSC documented discharges of unknown off-color materials in the storm sewer that were traced to be coming from the facility in 1947, 1948, 1956, 1970-1971, 1974, 1976, 1977, and 1978. Several of these were noted as violations (see Section 6 of Data Report). An October 23, 1990, Progress Report on Cleanup of South Drainage Trench referred to notices of violations Penco of Lyndhurst received concerning unpermitted discharges to the storm sewer and from the drainage ditch (PAS-00113370, 372-73). According to the PVSC Weekly Summary of Inspections by Inspector, on May 3, 1956, inspection of the Lyndhurst storm sewer showed a jet black discharge into the Passaic River that had killed a number of small fish. In May [1977], suppression of a fire on para-nitrophenol (PNP) pallets washed PNP into the storm sewer (PAS-00112802). Many of the chemicals were stored in above- and below-ground tanks and in 55-gallon drums in various locations. Prior to construction Buildings 38 and 39, the area occupied by Building 39 was used for storage of solvents in drums. Infrequently, materials were spilled or drums ruptured. (see FDR p. 6)	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	5.037E-2

AP_ABS

5.037E-2

Allocation Facility Cmass Calculation

Cooper Industries LLC

7, 13, & 26 Bank Street

Newark

NJ

07102

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic Cmass
Copper	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
Lead	100.00%	-	100.00%	-	100.00%	-	100.00%	0.6	0.58	1.018817E-2	0.01
Mercury	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
LPAHs	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
PCBs	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Cooper Industries LLC

7, 13, & 26 Bank Street

Newark

NJ

07102

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0.01	1.838E-9	1.838E-11
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	0	0	0
LPAHs	0.01	170,000.00	0	0	0
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Cooper Industries LLC

7, 13, & 26 Bank Street

Newark

NJ

07102

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	2.000E-6	0.01	6.39	2.000E-6	2.000E-8
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	0	0	0	0	0
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	0	0	0	0	0
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Cooper Industries LLC

7, 13, & 26 Bank Street

Newark

NJ

07102

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Passaic River		100.00%	100.00%	Facility operation prior to PVSC (1924)

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	No information on discharges - estimating entirely based on Cooper Littleton ave
	# days/week discharged	Sheer and Scissors manufacturer
	# weeks/yr discharged	J Wiss and Sons operator, sold to Cooper but Cooper states they are not the legal successor to any
5,200	# gals/yr directly discharged	CERCLA liabilities associated with Bank Street. FDR pages 5-6
	4.08 ft; 30yr average annual precipitation per Rutgers information	
	acres	
43,560	ft2 per acre	
	acres	
50%	Percent Precip to River	
	1848 Yr Ops started	
	1887 Yr Ops ceased	
39	calc #yrs facility operated	
Copper (Cu)		
39	#yrs facility discharged	Based on Cooper Littleton Ave
-	calc mg/L COC discharged	FDR Page 5
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
39	#yrs facility discharged	Based on Cooper Littleton Ave
0.752	calc mg/L COC discharged	Lead may have been present FDR Page 5
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.58	calc kg COC discharged	
Mercury (Hg)		
39	#yrs facility discharged	Based on Cooper Littleton Ave
-	calc mg/L COC discharged	FDR Page 5
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
39	#yrs facility discharged	
-	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
39	#yrs facility discharged	
-	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
39	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
39	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
39	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
39	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
39	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
39	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
39	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
0.58	kg Lead	
-	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Allocation Facility Cmass Calculation

Cooper Industries LLC

33 Littleton Avenue

Newark

NJ

07107

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	-	100.00%	-	13.00%	10.54	100.00%	-	1.37	1.018817E-2	0.01
Lead	100.00%	-	100.00%	-	13.00%	566.42	100.00%	-	73.65	1.018817E-2	0.75
Mercury	100.00%	-	100.00%	-	13.00%	29.81	100.00%	-	3.88	1.018817E-2	0.04
HPAHs	100.00%	-	100.00%	-	13.00%	-	100.00%	-	0	1.018817E-2	0
LPAHs	100.00%	-	100.00%	-	13.00%	-	100.00%	-	0	1.018817E-2	0
PCBs	100.00%	-	100.00%	-	13.00%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	13.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	13.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	13.00%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Cooper Industries LLC

33 Littleton Avenue

Newark

NJ

07107

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0.01	6.648E-9	4.587E-9
Lead	0.01	3,200,000.00	0.75	2.345E-7	2.345E-9
Mercury	0.95	42,000.00	0.04	9.402E-7	8.932E-7
HPAHs	0.05	240,000.00	0	0	0
LPAHs	0.01	170,000.00	0	0	0
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Cooper Industries LLC

33 Littleton Avenue

Newark

NJ

07107

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	4.948E-6	0.01	10.38	4.948E-6	3.414E-6
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	2.552E-4	0.75	815.91	2.552E-4	2.552E-6
Mercury	0.95	42,000.00	4,322.53	41,955.96	8.967E-4	0.04	37.62	8.967E-4	8.519E-4
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	0	0	0	0	0
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	0	0	0	0	0
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Cooper Industries LLC

33 Littleton Avenue

Newark

NJ

07107

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Clay St	CSO	0.90%	41.36%	
2	Clay St	Bypass	12.63%	100.00%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
8-16 hrs/day	gal discharged per day/week/month # hours/ per day discharged 5 #days/week discharged 52 #weeks/yr discharged 22,098,798 calc gal/yr discharge	PVSC Sewer Permit No. 20400752 (PAP-0004752) Sanitary and wastewaters to combined sewer, no way for direct discharge to river. 1977 Semi Annual Report = 50000 gpd (PAS-00027647,50), including data from 1981-1985 1978 PVSC Ind Wastewater Questionnaire (PAS-00000743) = 32403360 gallons
	1976 Yr Ops started 1985 Yr Ops ceased 9 calc #hrs facility operated	1980 PVSC Sewer Connection Permit App = 183327 gpd (PAP-00332124) 1980 0.1320 MGD (PAS-00027508,681) December 1, 1976 through December 1985
Copper (Cu)		
9 #yrs facility discharged 0.014 calc mg/L COC discharged	1980 PVSC Sewer App = 0.236 mg/l Background CU concentration in Source Water 0.222 mg/l	
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
10.54 calc kg COC discharged		
Lead (Pb)		
9 #yrs facility discharged 0.752 calc mg/L COC discharged	1980 PVSC Sewer Connection App; Pb = .284, .482 and .457 mg/l	
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)	1980 sampling 2.56 mg/l	
566.42 calc kg COC discharged	1981 PVSC Sewer Connection Ap; 0.042 mg/l Pb	
Mercury (Hg)		
9 #yrs facility discharged 0.0396 calc mg/L COC discharged	1980 PVSC Sewer Connection App; Hg = .045, .116, and .037 mg/l June 1981 ND, and 48 hr composite sample ND	
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
29.81 calc kg COC discharged		
HPAHs		
9 #yrs facility discharged - calc mg/L O&G		
10% % O&G that is considered PAHs 60% % COC in O&G considered as PAHs		
- calc mg/L HPAHs		
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
LPAHs		
9 #yrs facility discharged - calc mg/L O&G		
10% % O&G that is considered PAHs 40% % COC in O&G considered as PAHs		
- calc mg/L LPAHs		
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
PCBs		
2 #yrs facility discharged within PCBs Timeline - calc mg/L COC discharged		
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
DDx		
-3 #yrs facility discharged within DDx Timeline - calc mg/L COC discharged		
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
DieIdrin		
10 #yrs facility discharged within DieIdrin Timeline - calc mg/L COC discharged		
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Dioxins/Furans		
9 #yrs facility discharged - calc mg/L COC discharged		
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Dioxin/Furan Precursor - 2,4-D		
10 #yrs facility discharged within 2,4-D Timeline - calc mg/L COC discharged		
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Dioxin/Furan Precursor - 2,4,5-T		
10 #yrs facility discharged within 2,4,5-T Timeline - calc mg/L COC discharged		
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Dioxin/Furan Precursor - 2,4,6-TCP		
0 #yrs facility discharged within 2,4,6-TCP Timeline - calc mg/L COC discharged		
3.785 L per gallon (Merck Index) 0.000001 kg per mg (Merck Index)		
- calc kg COC discharged		
Summary DMassCOC for POTW:		
10.54 kg Copper		
566.42 kg Lead		
29.81 kg Mercury		
- kg HPAHs		
- kg LPAHs		
- kg PCBs		
- kg DDx		
- kg DieIdrin		
- kg Dioxins/Furans		

Allocation Facility Cmass Calculation

Cooper Industries LLC

75 Belmont Avenue

Belleville

NJ

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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	54,902.33	100.00%	204.20	12.41%	367.56	100.00%	4,154.9	59,307.03	1.018817E-2	604.23
Lead	100.00%	1,578.47	100.00%	120.64	12.41%	217.15	100.00%	167.2	1,893.31	1.018817E-2	19.29
Mercury	100.00%	2,423.69	100.00%	91.84	12.41%	165.31	100.00%	195.3	2,731.35	1.018817E-2	27.83
HPAHs	100.00%	0.38	100.00%	-	12.41%	-	100.00%	-	0.38	1.018817E-2	0
LPAHs	100.00%	28.65	100.00%	-	12.41%	-	100.00%	-	28.65	1.018817E-2	0.29
PCBs	100.00%	1.7	100.00%	-	12.41%	-	100.00%	-	1.7	1.018817E-2	0.02
DDx	100.00%	-	100.00%	-	12.41%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	12.41%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	12.41%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Cooper Industries LLC

75 Belmont Avenue

Belleville

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07109

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	604.23	2.877E-4	1.985E-4
Lead	0.01	3,200,000.00	19.29	6.028E-6	6.028E-8
Mercury	0.95	42,000.00	27.83	6.626E-4	6.294E-4
HPAHs	0.05	240,000.00	0	1.613E-8	8.066E-10
LPAHs	0.01	170,000.00	0.29	1.717E-6	1.717E-8
PCBs	12.87	26,000.00	0.02	6.661E-7	8.573E-6
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Cooper Industries LLC

75 Belmont Avenue

Belleville

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	2.141E-1	604.23	449,080.36	2.141E-1	1.478E-1
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	6.561E-3	19.29	20,975.34	6.561E-3	6.561E-5
Mercury	0.95	42,000.00	4,322.53	41,955.96	6.319E-1	27.83	26,511.37	6.319E-1	6.003E-1
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	8.743E-8	0	0.02	8.743E-8	4.371E-9
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	9.509E-6	0.29	1.32	9.509E-6	9.509E-8
PCBs	12.87	26,000.00	20,066.54	25,795.56	8.472E-5	0.02	2.19	8.472E-5	1.090E-3
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Cooper Industries LLC

75 Belmont Avenue

Belleville

NJ

07109

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Union Outlet	Bypass	12.41%	100.00%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	From 1966-1987 discharge to PVSC, Prior to that discharge was to Belleville Sewer and Meadow Brook
	# hours/ per day discharged	
	#days/week discharged	1966 - 328pm x 236 days/year (PAP-00333570)
	#weeks/yr discharged	1978 Selected Substance Report - 75000 gpd (PAP-00334489)
25,955,562	calc gal/yr discharge	1979 PVSC Sewer Connection Ap - 51495409 gallons (PAP-00402951, 57, 60, 62, 66)
		1980 PVSC Heavy Metal Source Determination Study - 0.1090 MGD (PAS-00027741-46)
1966	Yr Ops started	1986 Jan-Mar - 6449000 x 4 quarters (PAP-00402968-70)
1987	Yr Ops ceased	
21	calc #yrs facility operated	
Copper (Cu)		Background influent water copper concentration=.222mg/l
21	#yrs facility discharged	1980 PVSC Sewer Connection Ap cu=.748 mg/l
-	calc mg/L COC discharged	1980 PVSC Heavy Metals Source Determination Study cu=.144mg/l
3.785	L per gallon (Merck Index)	1984 Sampling cu=.026 mg/l PAP-00334524
0.000001	kg per mg (Merck Index)	1985 sampling cu=.052 mg/l PAP-00333499
-	calc kg COC discharged	
Lead (Pb)		Background influent water Lead concentration=.03mg/l
21	#yrs facility discharged	1980 PVSC Heavy Metals Source Determination Study pb=.300mg/l
0.0304	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	1984 Sampling pb=.025 mg/l PAP-00334524
0.000001	kg per mg (Merck Index)	1985 sampling pb=.025 mg/l PAP-00333499
62.72	calc kg COC discharged	
Mercury (Hg)		Background influent water mercury concentration=.0004mg/l
21	#yrs facility discharged	1980 PVSC Sewer Connection Ap Hg = .15 mg/l
0.0355	calc mg/L COC discharged	1980 PVSC Heavy Metals Source Determination Study Hg = .025 mg/l
3.785	L per gallon (Merck Index)	1984 Sampling Hg=.059 mg/l PAP-00334524
0.000001	kg per mg (Merck Index)	
73.24	calc kg COC discharged	
HPAHs		
21	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
21	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
12	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
7	#yrs facility discharged within DDX Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
22	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
21	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
22	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
20	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
10	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
-	kg Copper	
62.72	kg Lead	
73.24	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDX	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	From 1966-1987 discharge to PVSC, Prior to that discharge was to Belleville Sewer and Meadow Brook
	# hours/per day discharged	
	#days/week discharged	1966 - 32ppm x 236 days/year (PAP-00333570)
	#weeks/yr discharged	1978 Selected Substance Report - 75000 gpd (PAP-00334489)
25,955.562	calc gal/yr discharge	1979 PVSC Sewer Connection Ap - 51495409 gallons (PAP-00402951, 57, 60, 62, 66)
		1980 PVSC Heavy Metal Source Determination Study - 0.1090 MGD (PAS-00027741-46)
1942	Yr Ops started	1986 Jan-Mar - 6449000 x 4 quarters (PAP-00402968-70)
1966	Yr Ops ceased	
24	calc. yrs facility operated	
Copper (Cu)		
24	#yrs facility discharged	1980 PVSC Sewer Connection Ap cu=.748 mg/l
0.24	calc mg/L COC discharged	1980 PVSC Heavy Metals Source Determination Study cu=.144mg/l
3.785	L per gallon (Merck Index)	1984 Sampling cu=.026 mg/l PAP-00334524
0.000001	kg per mg (Merck Index)	1985 sampling cu=.052 mg/l PAP-00333499
571.77	calc kg COC discharged	
Lead (Pb)		
24	#yrs facility discharged	
0.12	calc mg/L COC discharged	1980 PVSC Heavy Metals Source Determination Study cpb=.300mg/l
3.785	L per gallon (Merck Index)	1984 Sampling pb=.025 mg/l PAP-00334524
0.000001	kg per mg (Merck Index)	1985 sampling pb=.025 mg/l PAP-00333499
275.08	calc kg COC discharged	
Mercury (Hg)		
24	#yrs facility discharged	1980 PVSC Sewer Connection Ap Hg = .15 mg/l
0.0780	calc mg/L COC discharged	1980 PVSC Heavy Metals Source Determination Study Hg = .025 mg/l
3.785	L per gallon (Merck Index)	1984 Sampling Hg=.059 mg/l PAP-00334524
0.000001	kg per mg (Merck Index)	
183.91	calc kg COC discharged	
HPAhs		
24	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
24	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
25	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
25	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
17	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
24	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
21	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
22	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
17	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
	571.77 kg Copper	
	275.08 kg Lead	
	183.91 kg Mercury	
	- kg HPAHs	
	- kg LPAHs	
	- kg PCBs	
	- kg DDx	
	- kg Dieldrin	

-	kg Dioxins/Furans	
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Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	1889-1942
	# days/week discharged	Direct Discharge to Meadow Brook which flows to Second River to Passaic River
	# weeks/yr discharged	
25,955,562	# gals/yr directly discharged	
4.08	ft; 30yr average annual precipitation per Rutgers information	
acres		
43,560	ft2 per acre	
acres		
50%	Percent Precip to River	
1909	Yr Ops started	FDR page 3
1965	Yr Ops ceased	FDR page 3
56	calc #yrs facility operated	FDR page 3
Copper (Cu)		Background influent water copper concentration=.222mg/l
56	#yrs facility discharged	1980 PVSC Sewer Connection Ap cu=.748 mg/l
-	calc mg/L COC discharged	1980 PVSC Heavy Metals Source Determination Study cu=.144mg/l
3.785	L per gallon (Merck Index)	1984 Sampling cu=.026 mg/l PAP-00334524
0.000001	kg per mg (Merck Index)	1985 sampling cu=.052 mg/l PAP-00333499
-	calc kg COC discharged	
Lead (Pb)		Background influent water Lead concentration=.03mg/l
56	#yrs facility discharged	1980 PVSC Heavy Metals Source Determination Study pb=.300mg/l
0.0304	calc mg/L COC discharged	1984 Sampling pb=.025 mg/l PAP-00334524
3.785	L per gallon (Merck Index)	1985 sampling pb=.025 mg/l PAP-00333499
0.000001	kg per mg (Merck Index)	
167.25	calc kg COC discharged	
Mercury (Hg)		Background influent water mercury concentration=.0004mg/l
56	#yrs facility discharged	1980 PVSC Sewer Connection Ap Hg = .15 mg/l
0.0355	calc mg/L COC discharged	1980 PVSC Heavy Metals Source Determination Study Hg = .025 mg/l
3.785	L per gallon (Merck Index)	1984 Sampling Hg=.059 mg/l PAP-00334524
0.000001	kg per mg (Merck Index)	
195.30	calc kg COC discharged	
HPAhs		
56	#yrs facility discharged	
-	calc mg/L O&G	
25%	% O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L HPAhs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
56	#yrs facility discharged	
-	calc mg/L O&G	
25%	% O&G that is considered PAHs	
40%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
56	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
56	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
56	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
56	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
56	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
56	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
56	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
167.25	kg Lead	
195.30	kg Mercury	
-	kg HPAhs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	1913-1939 discharge from lagoons to Meadow Brook
	# days/week discharged	
	# weeks/yr discharged	
14,123,892	# gals/yr directly discharged	
4.08	ft; 30yr average annual precipitation per Rutgers information	
43,560	acres	
43,560	ft2 per acre	
50%	acres	
50%	Percent Precip to River	
1900	Yr Ops started	FDR Page 7
1960	Yr Ops ceased	FDR Page 7
55	calc #yrs facility operated	FDR Page 7 - w/ adjustment for facility being closed 1904-1909
Copper (Cu)		Background influent water copper concentration=.222mg/l
55	#yrs facility discharged	PAP-00334684
3.92	calc mg/L COC discharged	PAP-00049910 and PAP-00335678
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
4,154.88	calc kg COC discharged	
Lead (Pb)		
55	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
55	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
55	#yrs facility discharged	
	calc mg/L O&G	
25%	% O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
55	#yrs facility discharged	
	calc mg/L O&G	
25%	% O&G that is considered PAHs	
40%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
55	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
55	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
55	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
55	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
55	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
55	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
55	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
4,154.88	kg Copper	
-	kg Lead	
-	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs

Direct Discharge Information
4.08 FEET/YEAR AVERAGE PRECIPITATION

ASSUMPTIONS, REFERENCES
Long term average annual precipitation includes floods and hurricane events occurring over time.

COMMENTS/NOTES
Data from Rutgers University.

15 ACRES - TOTAL SITE AREA (acres) FDR pg 1

Approx 7 acres within property line when surface soil sampled 1986 ECRA SES, (PAP-00049203 pg. 114)

8 ACRES - AFFECTED AREA

1925 drawing of Silver Lake Plant (PAP-00332567) with 'coke' and 'cake' piles adjacent to 50,000 ga. fuel oil AST, north of Red Iron Oxide Bldg. Preliminary Assessment Report, (Stantec May 24, 2012) Fig 2 has overlay of former buildings prior to parking lot (PAP-00334892). F and T Figures is 9 acres. With parking lot (Google Earth figure), 15 acres includes former sludge pond location.

Due to confirmed airborne surface soil deposition of Hg (FDR pg. 10), 100% of the property is deemed impacted for Hg. Other COCs will be 50% of 1986 acreage or calculations due to presence of buildings.

4,046.86 METERS²/ACRE

30,351 METERS² (AFFECTED AREA)

0.0001 METERS/YEAR (ERODED SOIL THICKNESS)

For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.

3 METERS³/YEAR (ERODED SOIL VOLUME)

VOLUME/YEAR DISCHARGED

1900 Year site operations began

Originally operated as Edison Manufacturing Company, a battery manufacturer in the early 1900s. Year operation began is 1900, as supported with FDR Section 3 dating the construction of buildings.

1987 Year site processing and storage operations ceased

The Final Preliminary Assessment Final Remedial Investigation Report, dated May 6, 2017 (Final RI Report), stated that the buildings associated with the Thomas A. Edison, Inc. Chemical Plant were demolished in the early 1970's, and the property remained vacant until it was redeveloped as a retail grocery store and laundromat with associated parking lots in 1980 (PAP-00334737, 840).

87 NUMBER YEARS DISCHARGE

264 METERS³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)

1,979 KG/M³ SOIL DENSITY

layers of unconsolidated sand, silt, and clay. (PAP-00049305). Bulk density range 1602 kg/m³ to 2355 kg/m³ on use average of 1978.5 kg/m³ Sandy or silty clay. The Allocation Team has concluded that the Site is not on regional Historic Fill as designated by the NJDEP.

522,438 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)

Copper (Cu)

87 YEARS DISCHARGED

80000 MG/KG (MAX CONCENTRATION)

1986 ECRA SES TABLE IV-1 (PAP-00049327)
Subsurface soil value (1-2 ft bgs) as surface soil is similar and was assumed to be at least that high to impact two feet down.
The highest concentration of copper in subsurface soil (1-3 ft bgs) was 80,000 ppm (PAP-00049316-17, 28-29).

0.000001 kg per mg (Merck Index)
41,795 KILOGRAMS DISCHARGED

Lead (Pb)

87 YEARS DISCHARGED
2300 MG/KG (AVERAGE CONCENTRATION)

1986 ECRA SES TABLE IV-1 (PAP-00049327)
Soil sample S-5 result from 2.5 feet bgs, listed in Summary of Historical Analytical Results in Area B (FDR page 13; PAP-00065653)

0.000001 kg per mg (Merck Index)
1,202 KILOGRAMS DISCHARGED

Mercury (Hg)

87 YEARS DISCHARGED
2,005 MG/KG (MAX CONCENTRATION)

Operation of Hg/Zn amalgamation may have resulted in disposition elemental Hg on property. August 20, 1986 ECRA SES Pg. 36.

0.000001 kg per mg (Merck Index)
2,095 KILOGRAMS DISCHARGED

The highest concentration of mercury in surface soil was 2,005 ppm, detected between the main building and Building No. 57 (PAP-00049327)

PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	Total concentration of PAH compounds for Benzo(a)pyrene Equivalent https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample .
87 YEARS DISCHARGED	
0.552 MG/KG (TOTAL PAH AVERAGE CONCENTRATION)	
0.000001 kg per mg (Merck Index)	
0.29 KILOGRAMS DISCHARGED	
PAHs (others detected)	
87 YEARS DISCHARGED	
54.20 MG/KG (TOTAL PAH MAX CONCENTRATION)	
0.000001 kg per mg (Merck Index)	
28 KILOGRAMS DISCHARGED	
PCBs	

57 YEARS DISCHARGED
3.36 MG/KG (MAX OF REPORTED CONCENTRATIONS)

PCBs were detected in TCLP composite sample 3.36 ppm (PAP-00332584). Reduced discharge period to 1930-1987.

Phenanthrene - 7.7 ppm
Acenaphthylene - 2.4 ppm
2-methylnaphthalene - 35 ppm
Naphthalene - 3.4 ppm
Fluorene - 5.7 ppm

Table 9, Sample ID B-P31S (5.0-6.0 ft bgs)

0.000001 kg per mg (Merck Index)	
1 KILOGRAMS DISCHARGED	
DDx	
0 YEARS DISCHARGED within DDx Timeline	
MG/KG (MAX CONCENTRATION)	
3.785 L per gallon (Merck Index)	
0.000001 kg per mg (Merck Index)	
0 KILOGRAMS DISCHARGED	
Dieldrin	
0 YEARS DISCHARGED within Dieldrin Timeline	
MG/KG (MAX CONCENTRATION)	
3.785 L per gallon (Merck Index)	
0.000001 kg per mg (Merck Index)	
0 KILOGRAMS DISCHARGED	
Dioxins/Furans	
NONE FOUND IN AVAILABLE DOCUMENTATION	NOT DETECTED (FDR)
0 YEARS DISCHARGED	
0 MG/KG (MAX CONCENTRATION)	
0.000001 kg per mg (Merck Index)	
0 calc kg COC discharged	

SUMMARY CMASST ESTIMATES:
41,795.04 kg Copper
1,201.61 kg Lead
2,094.98 kg Mercury
0.29 kg PAHs (Benzo(a)pyrene Equivalent)
28.32 kg PAHs (Other)
1.15 kg PCBs
0.00 kg DDx
0.00 kg Dieldrin
0.00 kg Dioxins/Furans

45121.38 MASS (KG) DISCHARGED FROM SURFACE SOIL

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.390	1.0	0.3900
Benzo(a)anthracene	0.430	0.1	0.0430
Benzo(b)fluoranthene	0.690	0.1	0.0690
Benzo(k)fluoranthene	0.250	0.01	0.0025
Chrysene	0.560	0.001	0.0006
Dibenz(a,h)anthracene	0.037	1.0	0.0370
Indeno(1,2,3-cd)pyrene	0.100	0.1	0.0100

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 0.552

Discharge Calcs

Direct Discharge Information

0.46 FEET for 6 flooding events

NOTES, COMMENTS, REFERENCES

AVERAGE SHOULD INCLUDE FLOODS AND HURRICANE EVENTS OVER TIME

6 qty, 11,532 gallon release events (6 foot deep 1,992 sf basin), equals 0.46 feet in a 1,992 basin.

15 ACRES - TOTAL SITE AREA (acres)

FDR pg 1

0.04 ACRES - AFFECTED AREA

ESTIMATED LAGOON AND NEUTRALIZATION AREA (PAS-00109548)

4,046.86 METERS²/ACRE

Preliminary Assessment Report, Fig 2 (PAP-00334892) has overlay of former buildings prior to parking lot with former sludge pond in upper left corner. Approximately 1,922 sqft.

Unknown, but given 100,000-gal water released in 1948 flood event and 1,922 sq ft area of lagoon, assume greater than 1,000 gal released.

On May 30, 1984, the sedimentation impoundment overflowed. The accidental discharge was due to a blockage of the discharge line and extremely heavy rains. The overflow went to a neighboring homeowner's property and accumulated in an area being prepared for an in-ground swimming pool. (PAP-00049278)162 METERS² (AFFECTED AREA)

0.0170 METERS/YEAR (ERODED SOIL THICKNESS)

With 3.7% solids in sludge (PAP-00332945) and a one time event, 0.037*0.46 feet of flood water in 1,992 basin, eroded soil thickness is 0.01702

12755.10204

2.76 METERS³/YEAR (ERODED SOIL VOLUME)

ASSUME VOLUME/YEAR DISCHARGED TO DITCHES AND FIRST CREEK

YEAR STARTED DISCHARGING TO LAGOON
SITE REMEDIATION, GEOTEXTILE, ASPHALT COVER

1 NUMBER YEARS DISCHARGE

Years of discharge (6 flooding events) converted to one time depth in 1,992 sf pond.

2.76 METERS³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)1,024 KG/M³ SOIL DENSITYsludge density is 1.024 kg/L at 1000L/m³ = 1024 kg/m³

McGraw-Edison Company to Caldwell Trucking Company, Inc. may 9, 1973 re: sludge contents (PAP-00332945). Total solids of 33,500 mg/L or 3.7% by weight equals a density of 1.024 kg/L for converting the estimated concentration of sludge to solid released during flooding events.

2,821 KILOGRAMS (TOTAL WT OF SOIL AFFECTED OVER TIME)

Copper (Cu)

1 YEARS DISCHARGED
31.25 MG/KG (MAX CONCENTRATION)Copper from sludge,(32 mg/L * 1000 L/m³)/1024 kg/m³ density of sludge. (FDR, PAGE 6, 2nd paragraph and PAP-00332945).0.000001 kg per mg (Merck Index)
0.088 KILOGRAMS DISCHARGED

Lead (Pb)

1 YEARS DISCHARGED
10 MG/KG (MAX CONCENTRATION)

Samples of the settling pit were collected January 18, 1983 and reported up to 75.53 mg/kg mercury and 10.03 mg/kg lead (note units of measure were not clearly identified). Copper was not reported (PAP-CONF-00009957).

0.000001 kg per mg (Merck Index)
0 KILOGRAMS DISCHARGED

Mercury (Hg)

1 YEARS DISCHARGED
75.5 MG/KG (MAX CONCENTRATION)

Samples of the settling pit were collected January 18, 1983 and reported up to 75.53 mg/kg mercury and 10.03 mg/kg lead (note units of measure were not clearly identified). Copper was not reported (PAP-CONF-00009957).

0.000001 kg per mg (Merck Index)
0.21 KILOGRAMS DISCHARGED

SUMMARY CMASST ESTIMATES:

0.09 kg Copper
0.03 kg Lead
0.21 kg Mercury

0.33 MASS (KG) DISCHARGED BY OVERLAND FLOW

Discharge Calcs		Direct Discharge Information	NOTES, COMMENTS, REFERENCES
		0.46 FEET for 6 flooding events	AVERAGE SHOULD INCLUDE FLOODS AND HURRICANE EVENTS OVER TIME
		ACRES - TOTAL SITE AREA (acres)	
		ACRES - AFFECTED AREA	ESTIMATED 30-ft DIA Scoured hole from 10" pipe break on May 12, 1948 (PAS-00050268) Fire sprinkler line would be below the frost line (6' bgs) so with scour of a 30-ft diameter hole with an average depth of 8-feet would release approximately 5,652 cubic feet or 160 m ³ of soil. Using the same density as for surface erosion, 1978.5 mg/m ³ equals 163,840 kg
		4,046.86 METERS ² /ACRE	
		0 METERS ² (AFFECTED AREA)	PVSC inspection records 1938-1948 noted events such as heavy rains caused flooding at facility site. 5/12/1948 wastes flowed into Second River from Meadow Brook storm sewer; Second River looked like "river of blood all the way down to its confluence with the Passaic River." Discharge from facility site, caused by waterline break, releasing 100,000 gals water, flooded all north side bldgs, undermined bldgs, produced 30-ft hole in yard resulting in collapse of all 3 industrial sewers. (PAP-00050259)
		0.0170 METERS/YEAR (ERODED SOIL THICKNESS)	
		0.00 METERS ³ /YEAR (ERODED SOIL VOLUME)	ASSUME VOLUME/YEAR DISCHARGED
		YEAR STARTED DISCHARGING TO LAGOON	
		SITE REMEDIATION, GEOTEXTILE, ASPHALT COVER	
		1 NUMBER YEARS DISCHARGE	
		0.00 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)	
		1,979 KG/M ³ SOIL DENSITY	Layers of unconsolidated sand, silt, and clay. (PAP-00049305). Bulk density range 1602 kg/m ³ to 2355 kg/m ³ , so use average of 1978.5 kg/m ³ . Sandy or silty clay for http://structx.com/Soil_Properties_002.html
		163,840 KILOGRAMS (TOTAL WT OF SOIL AFFECTED FROM SCOUR)	
Copper (Cu)		1 YEARS DISCHARGED	1986 ECRA SES TABLE IV-1 (PAP-00049327) Subsurface soil value (1-2 ft bgs) as surface soil is similar and was assumed to be at least that high to impact two feet down. The highest concentration of copper in subsurface soil (1-3 ft bgs) was 80,000 ppm (PAP-00049316-17, 28-29).
		80000 MG/KG (MAX CONCENTRATION)	
		0.000001 kg per mg (Merck Index)	
		13,107.200 KILOGRAMS DISCHARGED	
Lead (Pb)		1 YEARS DISCHARGED	1986 ECRA SES TABLE IV-1 (PAP-00049327)
		2300 MG/KG (MAX CONCENTRATION)	Soil sample S-5 result from 2.5 feet bgs, listed in Summary of Historical Analytical Results in Area B (FDR page 13; PAP-00065653)
		0.000001 kg per mg (Merck Index)	
		377 KILOGRAMS DISCHARGED	
Mercury (Hg)		1 YEARS DISCHARGED	Operation of Hg/Zn amalgamation may have resulted in disposition elemental Hg on property. August 20, 1986 ECRA SES Pg. 36.
		2,005 MG/KG (MAX CONCENTRATION)	The highest concentration of mercury in surface soil was 2,005 ppm, detected between the main building and Building No. 57 (PAP-00049327)
		0.000001 kg per mg (Merck Index)	
		328.50 KILOGRAMS DISCHARGED	
PAHs (listed in Benzoic Pyrene Equivalent conversion table)		1 YEARS DISCHARGED	Total concentration of PAH compounds for Benzo(a)pyrene Equivalent https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample .
		0.552 MG/KG (TOTAL PAH AVERAGE CONCENTRATION)	Attributed to historic fill - The 2017 Final RI Report attributed the PAHs (except 2-methylnaphthalene) concentrations in soil to historic fill (PAP-00334877).
		0.000001 kg per mg (Merck Index)	
		0.09 KILOGRAMS DISCHARGED	
PAHs (others detected)		28 YEARS DISCHARGED	Benzo (g,h,i) perylene - 0.09J ppm
		2.00 MG/KG (TOTAL PAH MAX CONCENTRATION)	Fluoranthene - 0.63 ppm
		0.000001 kg per mg (Merck Index)	Phenanthrene - 0.2J
		0.33 KILOGRAMS DISCHARGED	Pyrene - 0.49 ppm
			Anthracene - 0.59J

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene (0.39mg/kg< HF 1.89)	0.390	1.0	0.3900
Benzo(a)anthracene (0.43mg/kg< HF 1.37)	0.430	0.1	0.0430
Benzo(b)fluoranthene (0.69mg/kg< HF 1.91)	0.690	0.1	0.0690
Benzo(k)fluoranthene (0.25mg/kg< HF 1.79)	0.250	0.01	0.0025
Chrysene	0.560	0.001	0.0006
Dibenz(a,h)anthracene (0.024mg/kg< HF 1.24)	0.037	1.0	0.0370
Indeno(1,2,3-cd)pyrene	0.100	0.1	0.0100
DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg			
Total Benzo(a)pyrene Equivalents =			0.552

PCBs
28 YEARS DISCHARGED within PCBs Timeline
3.36 MG/KG (MAX OF REPORTED CONCENTRATIONS)

PCBs were detected in TCLP composite sample 3.36 ppm (PAP-00332584).

0.000001 kg per mg (Merck Index)
1 KILOGRAMS DISCHARGED

DDx
0 YEARS DISCHARGED within DDx Timeline
MG/KG (CONCENTRATION)
3.785 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)
0 KILOGRAMS DISCHARGED

Dieldrin
0 YEARS DISCHARGED within Dieldrin Timeline
MG/KG (CONCENTRATION)
3.785 L per gallon (Merck Index)

0.000001 kg per mg (Merck Index)
0 KILOGRAMS DISCHARGED

Dioxins/Furans
0 YEARS DISCHARGED
MG/KG (CONCENTRATION)
0.000001 kg per mg (Merck Index)

0 calc kg COC discharged

SUMMARY CMASS ESTIMATES:
13,107.20 kg Copper
376.83 kg Lead
328.50 kg Mercury
0.09 kg PAHs MAX
0.33 kg PAHs MAX
0.55 kg PCBs
0.00 kg DDx
0.00 kg Dieldrin
0.00 kg Dioxins/Furans

13,813.50 MASS (KG) DISCHARGED BY OVERLAND FLOW

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Cooper Industries LLC

7, 13, & 26 Bank Street

Newark

NJ

07102

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
1.838E-11	0.0%	Historically Compliant or No Evidence	No information on violations or sloppy practices was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	1.470E-11

75 Belmont Avenue

Belleville

NJ

07109

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
8.366E-4	10.0%	Periodic Noncompliance	PVSC issued a notice to desist pollution to Edison Chemical Company at Belleville on May 1, 1939 (PAS-00028126). A record of ten years of inspections performed by the PVSC on the Edison Company, Storage Battery Division, in Silver Lake, Belleville, dated June 15, 1948, documented the investigation of contamination entering the Second River. NJDEP issued a Directive Letter to McGraw Edison on June 6, 1984, to cease operation of the unlined pretreatment lagoons (PAP-00049811). An August 4, 1987, NJDEP Inspection Report stated that the facility did not have a hazardous waste management program consistent with hazardous waste regulations. A NOV would have been issued, but the operations had ceased (PAP-00050211-13). On May 12, 1948, "exceptionally strong iron wastes were found flowing into the Second River from the Meadow Brook storm sewer of such intensity that Second River looked like a river of blood all the way down to its confluence with the Passaic River." The discharge emanated from Edison Storage Battery Division, Belmont Avenue, Belleville facility. The cause was a waterline break that resulted in releasing 100,000 gallons of water that flooded all north side buildings, undermined the buildings and producing a 30-foot hole in the yard and resulting in subsequent collapse of all three industrial sewers. Chemicals, sand, and finished chemical materials were washed into the sewer and caused a blockage. The broken water line was repaired with a sleeve and the pipes broke again. The large hole filled with an acid and iron solution. A pump line from the hole drained the mixture into the clear water line directly to the storm sewer and into Second River. The waste could not be put into the sanitary sewer until new sewer pipes had been installed. The acid corroded the pumps and caused them to fail...(PAP-00050268-69).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	7.530E-4

33 Littleton Avenue

Newark

NJ

07107

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
9.002E-7	0.0%	Historically Compliant or No Evidence	The report stated that two wipe samples collected from stained areas on the concrete floor near the transformers inside the building contained PCB levels of 58 and 119 ppm. The report stated that "it is presumed that the elevated PCB levels PCBs were assumed to have resulted from historical spills from the transformers prior to retrofilling" (PAS-00027729). No indication of release of contamination to exterior of building. No information on NOVs was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	7.201E-7

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Cooper Industries LLC

7, 13, & 26 Bank Street

Newark

NJ

07102

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
2.000E-8	0.0%	Historically Compliant or No Evidence	No information on violations or sloppy practices was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	1.600E-8

75 Belmont Avenue

Belleville

NJ

07109

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
7.492E-1	10.0%	Periodic Noncompliance	PVSC issued a notice to desist pollution to Edison Chemical Company at Belleville on May 1, 1939 (PAS-00028126). A record of ten years of inspections performed by the PVSC on the Edison Company, Storage Battery Division, in Silver Lake, Belleville, dated June 15, 1948, documented the investigation of contamination entering the Second River. NJDEP issued a Directive Letter to McGraw Edison on June 6, 1984, to cease operation of the unlined pretreatment lagoons (PAP-00049811). An August 4, 1987, NJDEP Inspection Report stated that the facility did not have a hazardous waste management program consistent with hazardous waste regulations. A NOV would have been issued, but the operations had ceased (PAP-00050211-13). On May 12, 1948, "exceptionally strong iron wastes were found flowing into the Second River from the Meadow Brook storm sewer of such intensity that Second River looked like a river of blood all the way down to its confluence with the Passaic River." The discharge emanated from Edison Storage Battery Division, Belmont Avenue, Belleville facility. The cause was a waterline break that resulted in releasing 100,000 gallons of water that flooded all north side buildings, undermined the buildings and producing a 30-foot hole in the yard and resulting in subsequent collapse of all three industrial sewers. Chemicals, sand, and finished chemical materials were washed into the sewer and caused a blockage. The broken water line was repaired with a sleeve and the pipes broke again. The large hole filled with an acid and iron solution. A pump line from the hole drained the mixture into the clear water line directly to the storm sewer and into Second River. The waste could not be put into the sanitary sewer until new sewer pipes had been installed. The acid corroded the pumps and caused them to fail...(PAP-00050268-69).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	6.743E-1

33 Littleton Avenue

Newark

NJ

07107

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
8.578E-4	0.0%	Historically Compliant or No Evidence	The report stated that two wipe samples collected from stained areas on the concrete floor near the transformers inside the building contained PCB levels of 58 and 119 ppm. The report stated that "it is presumed that the elevated PCB levels PCBs were assumed to have resulted from historical spills from the transformers prior to retrofilling" (PAS-00027729). No indication of release of contamination to exterior of building. No information on NOVs was identified in the available file material.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	6.863E-4

Allocator's Determinations Regarding Legal Defenses Raised by Allocation Parties

COOPER INDUSTRIES – Bank Street

Cooper argues that it has no connection to or CERCLA liability for the Wiss Family Operations at these locations. The FDR acknowledges that Cooper never owned any of these locations or was connected to the operations at them. When Cooper acquired the assets of a New Jersey corporation, J. Wiss & Sons Co., in 1976, it acquired assets related to J. Wiss & Sons Co.'s then-operations at several locations, including at the Littleton Avenue location in Newark. Cooper assumed only specific and narrowly defined liabilities of J. Wiss & Sons Co. It did not assume any CERCLA liabilities of that corporation, much less those associated with these operations involving individual Wiss family members that ended more than a decade before J. Wiss & Sons Co. was incorporated. *United States v. Gen. Battery Corp.*, 423 F.3d 294, 305 (3d Cir. 2005) (appropriate indirect liability standard for CERCLA actions is the general rule of corporate-successor non-liability, *i.e.*, an acquiring company is generally not liable for the debts and liabilities of a selling company except in certain instances).

Cooper never owned or conducted any operations at any of the Bank Street locations. J. Wiss & Sons, Co. never operated at the Bank Street locations and was not formed until over ten years after the Bank Street real property was sold to Prudential Insurance Company (PAP-00332550; PAP-00331502).

In the 1976 transaction wherein Cooper acquired certain assets of J. Wiss & Sons Co., Cooper did not assume any CERCLA liabilities of J. Wiss & Sons Co. or of any alleged predecessors to J. Wiss & Sons Co., including any such liabilities with respect to the Bank Street locations.

Cooper disputes that it has any liability associated with the Primary Battery Facility operations prior to that period, when those operations were owned and operated by Thomas A. Edison, Inc. ('TAE') or after McGraw-Edison's ownership/operations of the Primary Battery Facility ended in 1985 (*i.e.*, Battery Products, Inc. operations).

In addition, the following statement was provided regarding the Storage Battery Business (Chemical Works plant): Cooper's liability, if any, for purposes of the Allocation does not extend to operations associated with the Storage Battery Business. When Cooper merged with McGraw-Edison in 1985, any liabilities that McGraw-Edison may have had with respect to the Storage Battery Business had already been transferred to and assumed by Electric Storage Battery Company (later referred to as Exide Technologies). Any operations in and after 1960 would be the responsibility of Exide, and Cooper has no connection to or liabilities for any such operations.

In addition, regarding the liabilities transferred to Exide, Cooper contends that those liabilities would not include any liabilities related to the operations prior to the 1957 TAE transaction.

ALLOCATOR'S DETERMINATION – Though Cooper Industries may have a sustainable argument regarding its allegation that it did not accept the CERCLA liability of J. Wiss & Sons, there is an

insufficient demonstration of applicable case law and facts to support this claim based on available data. Though the Allocator presumes a substantial chance of success should this matter go to litigation with sufficient evidence, we leave this matter as a topic for settlement discussions between Cooper Industries and EPA.

Allocation Facility Cmass Calculation

Covanta Essex Company

66 & 183 Raymond Blvd.

Newark

NJ

07105

Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Lead	100.00%	-	100.00%	-	0.00%	-	100.00%	16.0	15.98	1.018817E-2	0.16
Mercury	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
LPAHs	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
PCBs	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Covanta Essex Company

66 & 183 Raymond Blvd.

Newark

NJ

07105

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0.16	5.087E-8	5.087E-10
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	0	0	0
LPAHs	0.01	170,000.00	0	0	0
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Covanta Essex Company

66 & 183 Raymond Blvd.

Newark

NJ

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	5.536E-5	0.16	177.	5.536E-5	5.536E-7
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	0	0	0	0	0
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	0	0	0	0	0
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Covanta Essex Company

66 & 183 Raymond Blvd.

Newark

NJ

07105

Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	NJDPES Storm water Discharge Permit for discharge to Passaic River
	# days/week discharged	1990 permit flow rates PAS-00049021
	# weeks/yr discharged	DNS001 = 2.8-40gpm
9,276,840	# gals/yr directly discharged	DNS002 = 2.8-25gpm
	4.08 ft; 30yr average annual precipitation per Rutgers information	No Discharge to the PVSC, "other water" Recycled
	acres	
43,560	ft ² per acre	
	acres	
	50% Percent Precip to River	
	1990 Yr Ops started	
1997	Yr Ops ceased	Facility went to 0 discharge in 1997
7	calc #yrs facility operated	
Copper (Cu)		
7	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
7	#yrs facility discharged	Lead Results
0.22	calc mg/L COC discharged	196 ug/l PAS-00082812-14
3.785	L per gallon (Merck Index)	169-260ug/l PAS-00049054
0.000001	kg per mg (Merck Index)	196-295 ug/l
52.84	calc kg COC discharged	204 ug/l PAS00106082
Mercury (Hg)		
7	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
7	#yrs facility discharged	
-	calc mg/L O&G	
	10% % O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
7	#yrs facility discharged	
-	calc mg/L O&G	
	10% % O&G that is considered PAHs	
40%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
7	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
7	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
7	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
7	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
7	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
7	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
7	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
15.98	kg Lead	
-	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Covanta Essex Company

66 & 183 Raymond Blvd.

Newark

NJ

07105

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
3.815E-10	5.0%	Occasional Noncompliance	According to a NJDEP letter, dated June 22, 1988, the site was given an "unacceptable" rating for failing to monitor stormwater discharges and inaccurately reporting on discharge monitoring reports that there were no stormwater discharges (PAS-00082684). A 1991 compliance inspection gave the facility an "unacceptable" rating due to lead effluent violations, operational deficiencies (including the presence of ash piles on the ground), and the facility's effluent at outfall DSN001 was black at inspection, violating the facility's permit which is for stormwater only (PAS-00082812-14). On or about December 1, 1992, NJDEP and ARF entered into an Administrative Consent Order. ARF had exceeded certain discharge limits for lead, among others, in its NJPDES permit (PAS-00106056). Potential for contamination to be caused by preexisting conditions not CE actions	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	3.243E-10

AP_ABS

3.243E-10

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Covanta Essex Company

66 & 183 Raymond Blvd.

Newark

NJ

07105

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
4.152E-7	5.0%	Occasional Noncompliance	According to a NJDEP letter, dated June 22, 1988, the site was given an "unacceptable" rating for failing to monitor stormwater discharges and inaccurately reporting on discharge monitoring reports that there were no stormwater discharges (PAS-00082684). A 1991 compliance inspection gave the facility an "unacceptable" rating due to lead effluent violations, operational deficiencies (including the presence of ash piles on the ground), and the facility's effluent at outfall DSN001 was black at inspection, violating the facility's permit which is for stormwater only (PAS-00082812-14). On or about December 1, 1992, NJDEP and ARF entered into an Administrative Consent Order. ARF had exceeded certain discharge limits for lead, among others, in its NJPDES permit (PAS-00106056). Potential for contamination to be caused by preexisting conditions not CE actions	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	3.529E-7

AP_ABS

3.529E-7

Allocator's Determinations Regarding Legal Defenses Raised by Allocation Parties

COVANTA

Covanta argues that it is not and has never been the current owner or operator or former owner or operator of the LPRSA [Lower Passaic River Study Area]. Nor is there any evidence or suggestion that Covanta was a transporter of hazardous substances to the LPRSA. Accordingly, it appears that USEPA [United States Environmental Protection Agency] is contending that Covanta may be liable under CERCLA [Comprehensive Environmental Response, Compensation and Liability Act] as an arranger. Arranger liability requires that Covanta took intentional steps to dispose of a hazardous substance....As the United States Supreme Court has explained, intentional steps means that it must be proven that Covanta actually intended to dispose of hazardous substances in the LPRSA....Covanta operates, and since 1997 has operated, the ECRRF as a zero discharge facility, except during unusual storm events....The only evidence allegedly connecting Covanta to the LPRSA is the stormwater exceedances in ditches at the Property. These exceedances, however, are not attributable to the ECRRF or Covanta. Instead, these exceedances all stem from pre-existing contamination on the Property – property subjected to illegal dumping, previously owned by the NRHA [Newark Redevelopment and Housing Authority], and currently owned by the Port Authority – as well as offsite, upgradient sources and surface water backflow from the Passaic River. Simply put, there is no evidence that Covanta disposed of anything in the LPRSA (i.e., engaged in some active conduct that caused the discharge, deposit, injection, dumping, spilling, leaking, or placing of any hazardous substances in the LPRSA)....Even if evidence of the disposal of hazardous substances by Covanta did exist (and it does not), there is no evidence that Covanta intended to dispose of any hazardous substances in the LPRSA. Without intent, Covanta cannot be an arranger under CERCLA – even if Covanta knew or should have known that stormwater runoff carrying pre-existing contamination at the Property or contamination from other parties could discharge to the LPRSA.

In addition, Covanta asserts that, even putting aside the lack of evidence that Covanta is an arranger, there is another problem with seeking to hold Covanta liable under CERCLA for LPRSA impacts: Covanta's hazardous substances, if any, have not caused and will not cause the incurrence of response costs. In order to be liable under CERCLA, Covanta's releases of hazardous substances must cause the incurrence of response costs.... although lead is a COC for the LPRSA, USEPA has determined...that lead is not driving any response actions. In addition, none of the other substances detected in stormwater at the Property are COCs for the LPRSA. As hazardous substances in the Property's stormwater discharges will not cause the incurrence of LPRSA response costs, Covanta cannot be liable under CERCLA. Covanta reserves the right to assert additional defenses in the future.

ALLOCATOR'S DETERMINATION – As noted in the information regarding the site submitted by Covanta, it is clear the Covanta had stormwater discharges from their property that have contributed lead, one of the COCs identified by EPA, to the Lower Passaic. While they may be correct that the lead was deposited on their property by a former owner, that they have not intended to have stormwater discharges, and that lead is not the primary driver for the remediation, none of those arguments avoid liability under CERCLA. The Allocator does not

believe that Covanta will prevail in an action to overturn EPA's determination of Covanta as a PRP based on the available information. The possibility that a COC was transported to the facility site from an offsite location was taken into account in determining Covanta's allocated share.

Allocation Facility Cmass Calculation

Curtiss-Wright Corporation

1 Passaic Avenue

Wood-Ridge

NJ

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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	1,762.36	100.00%	-	2.32%	1,986.37	100.00%	-	1,808.44	1.018817E-2	18.42
Lead	100.00%	12,817.15	100.00%	-	2.32%	744.89	100.00%	-	12,834.43	1.018817E-2	130.76
Mercury	100.00%	45.93	100.00%	-	2.32%	3.35	100.00%	-	46.01	1.018817E-2	0.47
HPAHs	100.00%	72.86	100.00%	-	2.32%	2,234.66	100.00%	-	124.7	1.018817E-2	1.27
LPAHs	100.00%	66.01	100.00%	-	2.32%	1,489.78	100.00%	-	100.57	1.018817E-2	1.02
PCBs	100.00%	18.69	100.00%	-	2.32%	-	100.00%	-	18.69	1.018817E-2	0.19
DDx	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Curtiss-Wright Corporation

1 Passaic Avenue

Wood-Ridge

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	18.42	8.774E-6	6.054E-6
Lead	0.01	3,200,000.00	130.76	4.086E-5	4.086E-7
Mercury	0.95	42,000.00	0.47	1.116E-5	1.060E-5
HPAHs	0.05	240,000.00	1.27	5.294E-6	2.647E-7
LPAHs	0.01	170,000.00	1.02	6.027E-6	6.027E-8
PCBs	12.87	26,000.00	0.19	7.324E-6	9.426E-5
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

Curtiss-Wright Corporation

1 Passaic Avenue

Wood-Ridge

NJ

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	6.530E-3	18.42	13,693.77	6.530E-3	4.505E-3
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	4.447E-2	130.76	142,188.58	4.447E-2	4.447E-4
Mercury	0.95	42,000.00	4,322.53	41,955.96	1.064E-2	0.47	446.57	1.064E-2	1.011E-2
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	2.869E-5	1.27	5.62	2.869E-5	1.435E-6
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	3.338E-5	1.02	4.65	3.338E-5	3.338E-7
PCBs	12.87	26,000.00	20,066.54	25,795.56	9.314E-4	0.19	24.03	9.314E-4	1.199E-2
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Curtiss-Wright Corporation

1 Passaic Avenue

Wood-Ridge

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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Yantacaw	Bypass	2.32%	100.00%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
24,000,000	gal discharged per day/week/month	Limited information on Discharge COCs and no information on Discharge Flows.
1942	# hours/per day discharged	Based on Otis Elevator assuming 24MGY to PVSC
1983	#days/week discharged	
41	#weeks/yr discharged	
1,986.37	calc gal/yr discharge	
1983	Yr Ops started	
41	Yr Ops ceased	
41	calc #yrs facility operated	
Copper (Cu)		
41	#yrs facility discharged	1979-1984 Data Cu=.2 mg/l PAP-0456964-101
0.53	calc mg/L COC discharged	1983 sample Cu = .72 and .68 mg/l PAP-00457009
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,986.37	calc kg COC discharged	
Lead (Pb)		
41	#yrs facility discharged	1979-1984 Data Pb=.2 mg/l PAP-0456964-101
0.20	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
744.89	calc kg COC discharged	
Mercury (Hg)		
41	#yrs facility discharged	1981 Sample Data Hg=.0009mg/l PAP-00457060
0.0009	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
3.35	calc kg COC discharged	
HPAHs		
41	#yrs facility discharged	Assuming 10 mg/l O&G
10.00	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
1	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
2,234.66	calc kg COC discharged	
LPAHs		
41	#yrs facility discharged	Assuming 10 mg/l O&G
10.00	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
0	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,489.78	calc kg COC discharged	
PCBs		
36	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
31	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
34	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
41	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
38	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
39	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
1,986.37	kg Copper	
744.89	kg Lead	
3.35	kg Mercury	
2,234.66	kg HPAHs	
1,489.78	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION		
	160 ACRES - TOTAL SITE AREA (acres)		
	115.0 ACRES - AFFECTED AREA	FDR page 1 In 1951, the main, shared occupancy building is 38 acres, 6 NE-SW orientated buildings cover approximately 7 acres (PAP-00190307). Removing the building coverage from the 160 acres total leaves 115 acres subject to erosion.	Data from Rutgers University.
	4,046.86 METERS ² /ACRE		
	465,389 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	47 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED	
	1943 Year site operations began	Curtiss-Wright Corp operated an aircraft engine manufacturing plant at the site from March 1943 until November 1983. (PAP-00190346).	
	2001 Year site processing and storage operations ceased	Curtiss-Wright Corp owned site through 2001 (FDR page 1)	
	58 NUMBER YEARS DISCHARGE		
	2,699 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1,979 KG/M ³ SOIL DENSITY	Unconsolidated surface deposits generally consist of sand, silt, clay, and fine sand (PAP-00393240). Bulk density range 1,602 KG/M ³ to 2,355 KG/M ³ , so use average 1978.5 kg/m ³ for Sandy or Silty Clay on (http://structx.com/Soil_Properties_002.html)	
	5,340,477 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)	Facility is not located on historic fill (FDR page 4)	
Copper (Cu)	58 YEARS DISCHARGED		
	330 MG/KG (MAX CONCENTRATION)	Soil boring sample (PAP-00393057)	
	0.000001 kg per mg (Merck Index)		
	1,762 KILOGRAMS DISCHARGED		
Lead (Pb)	58 YEARS DISCHARGED		
	2400 MG/KG (AVERAGE CONCENTRATION)	Soil boring sample (PAP-00393057)	
	0.000001 kg per mg (Merck Index)		
	12,817 KILOGRAMS DISCHARGED		
Mercury (Hg)	58 YEARS DISCHARGED		
	8.6 MG/KG (MAX CONCENTRATION)	Soil boring sample (PAP-00393057)	
	0.000001 kg per mg (Merck Index)		
	46 KILOGRAMS DISCHARGED		
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	58 YEARS DISCHARGED	Total concentration of PAH compounds for Benzo(a)pyrene Equivalent https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample .	
	13.6 MG/KG (TOTAL PAH MAX CONCENTRATION)	No documentation of PAHs can be located other than the Rotary Power 1987 Post Excavation Soil Sample Results, Table 7.1-1 (PAP-00393180)	
	0.000001 kg per mg (Merck Index)		
	73 KILOGRAMS DISCHARGED		
PAHs (others detected)	58 YEARS DISCHARGED	Data below the Benzo(a)pyrene Equivalent Table	
	12 MG/KG (TOTAL PAH MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	66 KILOGRAMS DISCHARGED		
PCBs	58 YEARS DISCHARGED		
	3.5 MG/KG (MAX OF REPORTED CONCENTRATIONS)	Soil sample OF-29.1A from 5.5-6.0 ft below grade (PAP-00393154)	
	0.000001 kg per mg (Merck Index)		
	19 KILOGRAMS DISCHARGED		
SUMMARY CMASST ESTIMATES:			
	1,762.36 kg Copper		
	12,817.15 kg Lead		
	45.93 kg Mercury		
	72.86 kg PAHs (Benzo(a)pyrene Equivalent)		
	66.01 kg PAHs (Other)		
	18.69 kg PCBs		
	14782.99 MASS (KG) DISCHARGED FROM SURFACE SOIL		

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	9.300	1.0	9.3000
Benzo(a)anthracene	8.900	0.1	0.8900
Benzo(b)fluoranthene	0.000	0.1	0.0000
Benzo(k)fluoranthene	12.400	0.01	0.1240
Chrysene	9.300	0.001	0.0093
Dibenz(a,h)anthracene	3.000	1.0	3.0000
Indeno(1,2,3-cd)pyrene	3.200	0.1	0.3200

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 13.6

TABLE 7.1-1 Sample SS-C 0.0-0.5 ft bgs (PAP-00393180)			
Anthracene	1.7		
Acenaphthene	0.82		
Acenaphthylene	0		
Fluorene	0.44		
Naphthalene	0.1		
Phenanthrene	9.3		
2-Methylnaphthalene	0		
SUM	12.36		

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Curtiss-Wright Corporation

1 Passaic Avenue

Wood-
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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
1.116E-4	5.0%	Occasional Noncompliance	A PVSC letter report of pollution corrected in 1969, dated March 31, 1970, identified intermittent polluting discharges containing oil in 1968 from Curtiss-Wright to Felds Brook, which the report described as a tributary to the Passaic River (PAS-00008279). A letter reporting the results of an Inspection and Insulating Fluid Evaluation by Burlington Testing Company dated September 7, 1984 stated that 27 of 62 transformers showed evidence of slight leakage at various points, such as gauges, fins, valves, gaskets, tap changer, and bushing throats. Spills at two of the askarel (PCB)-filled transformers were also noted (PAP-00191030).	0.0%	0% Cooperation with conduct of allocation and requests for related information	1.172E-4

AP_ABS

1.172E-4

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Curtiss-Wright Corporation

1 Passaic Avenue

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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
2.705E-2	5.0%	Occasional Noncompliance	A PVSC letter report of pollution corrected in 1969, dated March 31, 1970, identified intermittent polluting discharges containing oil in 1968 from Curtiss-Wright to Felds Brook, which the report described as a tributary to the Passaic River (PAS-00008279). A letter reporting the results of an Inspection and Insulating Fluid Evaluation by Burlington Testing Company dated September 7, 1984 stated that 27 of 62 transformers showed evidence of slight leakage at various points, such as gauges, fins, valves, gaskets, tap changer, and bushing throats. Spills at two of the askarel (PCB)-filled transformers were also noted (PAP-00191030).	0.0%	0% Cooperation with conduct of allocation and requests for related information	2.840E-2

AP_ABS

2.840E-2

Allocation Facility Cmass Calculation

DII Industries, LLC

401 Worthington Avenue

Harrison

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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COCA%	COC Historic Cmass
Copper	100.00%	3,023.03	100.00%	-	0.27%	-	100.00%	-	3,023.03	1.018817E-2	30.8
Lead	100.00%	391.51	100.00%	-	0.27%	-	100.00%	-	391.51	1.018817E-2	3.99
Mercury	100.00%	1.75	100.00%	-	0.27%	0.41	100.00%	-	1.75	1.018817E-2	0.02
HPAHs	100.00%	9.18	100.00%	-	0.27%	-	100.00%	-	9.18	1.018817E-2	0.09
LPAHs	100.00%	1.06	100.00%	-	0.27%	-	100.00%	-	1.06	1.018817E-2	0.01
PCBs	100.00%	1.54	100.00%	-	0.27%	-	100.00%	-	1.54	1.018817E-2	0.02
DDx	100.00%	-	100.00%	-	0.27%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.27%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.27%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

DII Industries, LLC

401 Worthington Avenue

Harrison

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	30.8	1.467E-5	1.012E-5
Lead	0.01	3,200,000.00	3.99	1.246E-6	1.246E-8
Mercury	0.95	42,000.00	0.02	4.248E-7	4.035E-7
HPAHs	0.05	240,000.00	0.09	3.897E-7	1.948E-8
LPAHs	0.01	170,000.00	0.01	6.353E-8	6.353E-10
PCBs	12.87	26,000.00	0.02	6.035E-7	7.766E-6
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calculation

DII Industries, LLC

401 Worthington Avenue

Harrison

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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	1.092E-2	30.8	22,890.77	1.092E-2	7.531E-3
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	1.357E-3	3.99	4,337.41	1.357E-3	1.357E-5
Mercury	0.95	42,000.00	4,322.53	41,955.96	4.051E-4	0.02	17.	4.051E-4	3.849E-4
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	2.112E-6	0.09	0.41	2.112E-6	1.056E-7
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	3.518E-7	0.01	0.05	3.518E-7	3.518E-9
PCBs	12.87	26,000.00	20,066.54	25,795.56	7.674E-5	0.02	1.98	7.674E-5	9.877E-4
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

DII Industries, LLC

401 Worthington Avenue

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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Worthington Ave	CSO	0.48%	56.33%	No metering was done at this location for the Killiam report. CSO percentages were calculated by the median of all CSOs in the Harrison municipality

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	No Permitted discharges to Surface Water
	# hours/per day discharged	PVSC Permit No. 13402044 (PAS-00023275)
	#days/week discharged	Non contact cooling water and floor drains to PVSC w/ sanitary water
	#weeks/yr discharged	Did not generate process wastewater
13,500,000	calc gal/yr discharge	1989-1990 flows
		4.3 MGY Cooling Water
1985	Yr Ops started	9.2 MGY Sanitary
1993	Yr Ops ceased	
8	calc #yrs facility operated	Water from catch basins were discharged to PVSC
Copper (Cu)		
8	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
8	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		Only monitoring data from 1986 for Mercury
8	#yrs facility discharged	
0.0010	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.41	calc kg COC discharged	
HPAHs		
8	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% COC in O&G considered as PAHs	
-	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
8	#yrs facility discharged	
	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
-7	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
-12	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
3	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
8	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
9	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
1	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
-9	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
-	kg Copper	
-	kg Lead	
0.41	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.083 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.
	23 ACRES - TOTAL SITE AREA (acres) 5.2 ACRES - AFFECTED AREA	FDR p 1 Soil piles and unpaved areas (PAS-00022928 and PAS-0002293)	5.2 acres is based on the estimated pervious area in the figure on PAS-00022928.
	4,046.86 METERS ² /ACRE		
	21,044 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	2 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED TO PASSAIC RIVER	
	1985 Year site operations began	Operated and owned by DII/Dresser from January 1985 to February 1997. (FDR page 1)	
	1997 Year site processing and storage operations ceased	Dresser/DII ceased commercial or manufacturing operations at the plant in October 1993 (FDR page 1; PAS-0063866, PAS-00122467).	Dresser/DII sold site in 1997 (FDR page 1; PAS-0063866, PAS-00122467)
	12 NUMBER YEARS DISCHARGE		
	25.2524064 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1962.5 KG/M ³ SOIL DENSITY	Fill is red-brown fine sands and silts with lesser quantities of medium to coarse-grained sands, gravels, and clays. (PAS-00023130, PDF page 212). Used "silty sand and gravel" soil type from http://structx.com/Soil_Properties_002.html . Bulk density range 1442 KG/M ³ to 2483 KG/M ³ , so use average. Average is 1962.5 kg/m ³	
	49,558 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)	The Allocation Team has determined that the facility site is not located on regional Historic Fill as designated by the NJDEP (FDR page 8)	
Copper (Cu)	12 YEARS DISCHARGED 61000 MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index)	Sample 4b-2 at a depth of 0-6 inches bgs (PAS-00023061)	
	3,023 KILOGRAMS DISCHARGED		
Lead (Pb)	12 YEARS DISCHARGED 7900 MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index)	Sample 4b-2 at a depth of 0-6 inches bgs (PAS-00023061)	
	392 KILOGRAMS DISCHARGED		
Mercury	12 YEARS DISCHARGED 35.4 MG/KG (MAX CONCENTRATIONS) 0.000001 kg per mg (Merck Index)	Maximum mercury concentration (PAS-00023178).	
	2 KILOGRAMS DISCHARGED		

PAHs (listed in Benzo(a)pyrene Equivalent conversion table)

12 YEARS DISCHARGED

185.231262 MG/KG (TOTAL PAH AVERAGE CONCENTRATION)

0.000001 kg per mg (Merck Index)

9 KILOGRAMS DISCHARGED

PAHs (others detected)

12 YEARS DISCHARGED

21.315 MG/KG (TOTAL PAH MAX CONCENTRATION)

0.000001 kg per mg (Merck Index)

1 KILOGRAMS DISCHARGED

PCBs

12 YEARS DISCHARGED

31 MG/KG (MAX OF REPORTED CONCENTRATIONS)

The maximum detected PCB concentration was Aroclor-1254 in soil sample 4c-4 at a depth of 0-6 inches (PAS-00023060)

0.000001 kg per mg (Merck Index)

1.5 KILOGRAMS DISCHARGED

SUMMARY CMASST ESTIMATES:

3023.03 kg Copper
391.51 kg Lead
1.75 Mercury
9.18 kg PAHs (Benzo(a)pyrene Equivalent)
1.06 kg PAHs (Other)
1.54 kg PCBs
0.00 kg Dieldrin
0.00 kg Dioxins/Furans

3428.06 MASS (KG) DISCHARGED FROM SURFACE SOIL

Total concentration of PAH compounds for Benzo(a)pyrene Equivalent
<https://floridadep.gov/waste/petroleum-restoration/documents/benzo-a-pyrene-equivalents-conversion-table-one-sample>.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	148.489	1.0	148.4890
Benzo(a)anthracene	104.440	0.1	10.4440
Benzo(b)fluoranthene	122.640	0.1	12.2640
Benzo(k)fluoranthene	54.352	0.01	0.5435
Chrysene	103.142	0.001	0.1031
Dibenz(a,h)anthracene	11.240	1.0	11.2400
Indeno(1,2,3-cd)pyrene	21.476	0.1	2.1476

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents = 185.2

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

DII Industries, LLC

401 Worthington Avenue

Harrison

NJ

07029

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
1.832E-5	0.0%	Historically Compliant or No Evidence	There is one violation citing N.J.A.C. 7:26-9.4 (g) 8 et seq. – failure to conduct semi-annual drills. 9.6(f) 4 – failure to familiarize local hospitals with properties of hazardous waste handled onsite. 9.7(a) – failure to have a written contingency plan (PAS-00122350).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	1.466E-5
						AP_ABS 1.466E-5

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

DII Industries, LLC

401 Worthington Avenue

Harrison

NJ

07029

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
8.918E-3	0.0%	Historically Compliant or No Evidence	There is one violation citing N.J.A.C. 7:26-9.4 (g) 8 et seq. – failure to conduct semi-annual drills. 9.6(f) 4 – failure to familiarize local hospitals with properties of hazardous waste handled onsite. 9.7(a) – failure to have a written contingency plan (PAS-00122350).	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	7.134E-3
						AP_ABS 7.134E-3